

The Socialist Republic of Viet Nam  
Ministry of Construction (MOC)

The Socialist Republic of Viet Nam  
Project for Capacity Enhancement in Cost Estimation,  
Contract Management, Quality and Safety  
in Construction Investment Projects

# **PROJECT COMPLETION REPORT**

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Japan International Cooperation Agency (JICA)

Katahira & Engineers International  
Central Nippon Expressway Company Limited  
Metropolitan Expressway Company Limited

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## List of Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
ADB	Asian Development Bank
ALC	Autoclaved Lightweight Aerated Concrete
AMC	Academy of Managers for Construction and Cities
BOQ	Bill of Quantity
BOT	Build Operate and Transfer
BT	Build and Transfer
BTO	Build Transfer and Operate
CAMA	Construction Activity Management Authority
CBR	California bearing ratio
CCQSP or CCQS Project	the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects
CED	Construction Economics Department
CIIC	Construction Industry Information Center in Japan
CM	Construction Management
CPM	Construction Project Management
CPMU	Component Project Management Unit
C/P or C/Ps	Counterpart or Counterparts
CS	Construction Supervisor
DB	Dispute Boards
DLP	Defect Liability Period
DM	Decision Maker
DOC	Department of Construction
DPI	Department of Planning and Investment
EIA	Environment Impact Assessment
EM	Environment Management
EOI	Expression of Interest
EPC	Engineering, Procurement and Construction
EVN	Electricity Viet Nam
FIDIC	The International Federation of Consulting Engineers
FS	Financial Statement
GLCE	Guideline on Cost Estimation for Construction Contractor Work
GLCE- 1	Guideline on Cost Estimation for Indirect Construction Contractor Works
GLCE- 2	Guideline on Cost Estimation for Direct Construction Contractor Works
GLCM	Guideline on Contract Management and Contract Alteration for Construction Contractor Works
GLQI	Guideline for Quality Supervision and Inspection for State Authorities and Project Owners (POs) / Project Management Units (PMUs)
GLSEI	Guideline for Safety and Environmental Inspection for State Authorities (SAs) and Project Owners (POs) / Project Management Units (PMUs)
GOV	The Government of the Socialist Republic of Viet Nam
ICD	International Cooperation Department
ICE	Institute of Construction Economy
ISO	International Organization for Standardization
JICA	Japan International Cooperation Agency
JSC	Joint Steering Committee
MARD	Ministry of Agriculture and Rural Development
MDB	Multilateral Development Banks
MLIT	Ministry of Land, Infrastructure, Transport and Tourism (Japan)
MOC	Ministry of Construction

MOF	Ministry of Finance
MOIT	Ministry of Industry and Trade
MOLISA	Ministry of Labor, Invalids and Social Affairs
MOT	Ministry of Transport
MPI	Ministry of Planning and Investment
NATM	New Austrian Tunneling Method
OCAJI	Overseas Construction Association of Japan Incorporation
ODA	Official Development Assistance
PCU	Project Coordination Unit
PDM	Project Design Matrix
PMB	Project Management Board
PMC	Project Management Consultant
PMU	Project Management Unit
PO	Project Owner
PPC	Provincial People Committee
PPE	Personal Protective Equipment
PPP	Public–Private Partnership
PSSCOC	Public Sector Standard Conditions of Contract for Construction Work
QC	Quality Control
QCVN	National Technical Codes
QM	Quality Management
QMP	Quality Management Plan
Quality TCP	Technical Cooperation Project for Capacity Enhancement in Construction Quality Assurance
RD	Record of Discussion
SACE	State Authority for Construction Economics
SACQI	State Authority of Construction Quality Inspection
SCC	Standard Conditions of Contract
SM	Safety Management
SO	Superintending Officer
SPEM	Standard Plan for Environment Management
SPQM	Standard Plan for Quality Management
SPSEM	Standard Plan for Safety and Environment Management
SPSM	Standard Plan for Safety Management
SVC	Supervision Consultant
TCVN	Viet Nam Standard
VACC	Vietnam Association of Construction Contractors
VAT	Superintending Officer
VECAS	Vietnam Engineering Construction Association
VFCEA	Vietnam Federation of Civil Engineering Associations
VND	Viet Nam Dong
WB	World Bank
WPE	Work Performance Evaluation

# Project Brief



JAPAN INTERNATIONAL COOPERATION AGENCY  
MINISTRY OF CONSTRUCTION  
THE SOCIALIST REPUBLIC OF VIETNAM



## PROJECT FOR CAPACITY ENHANCEMENT IN COST ESTIMATION, CONTRACT MANAGEMENT, QUALITY AND SAFETY IN CONSTRUCTION INVESTMENT PROJECTS IN VIETNAM

**Project Title:** Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects in Vietnam

**Target Area:** Whole Vietnam

**Scheme:** Technical Cooperation

**Duration:** April 2015~April 2018



【4th Joint Steering Committee, 12 April 2017】

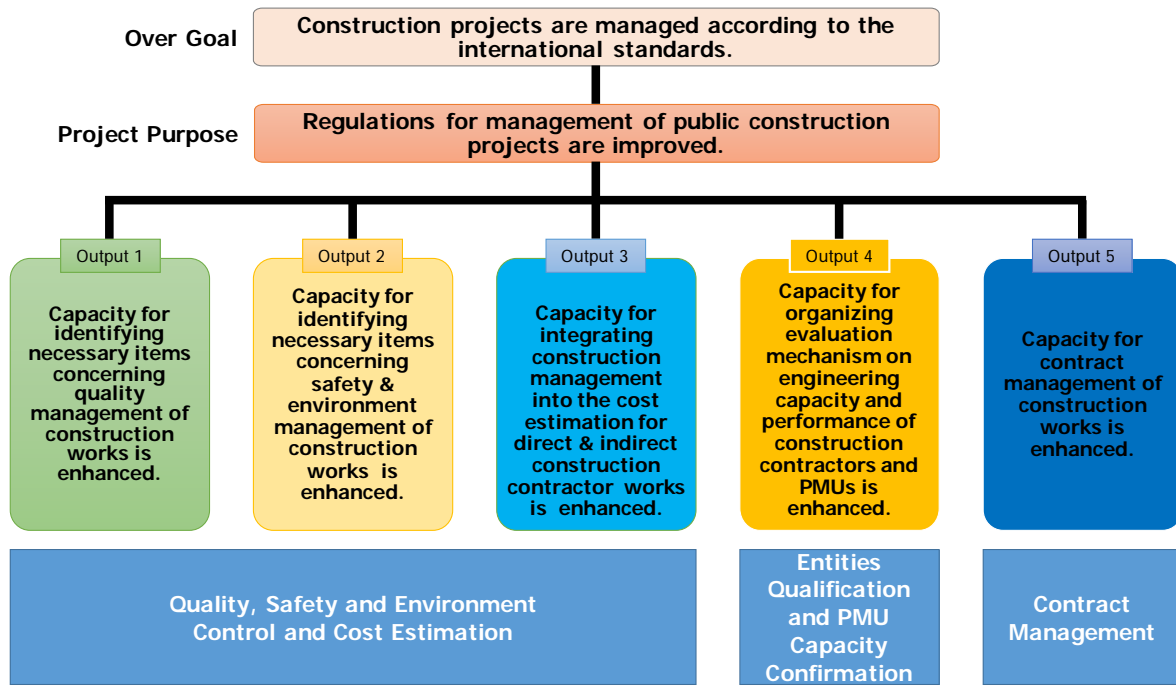


【Site visit with Counterpart, 9 December 2016】

### **Background of the CCQS Project**

- Japan International Cooperation Agency (JICA) implemented the technical cooperation project "the Project for Capacity Enhancement in Construction Quality Assurance (Quality TCP)" from May 2010 to December 2013.
- However, cost estimation and contract management affecting quality, safety and effectiveness in construction projects are still being carried out inadequately.
- According to the consideration as above, the Government of the Socialist of Viet Nam (GOV) requested JICA to run a technical cooperation project.
- Then, the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQSP) were formulated and being implemented as "Technical Cooperation Project of JICA."
- During the implementation of the CCQSP, additional activities were requested in Output 1, 2 & 3 and agreed in October 2016 to be carried out together.

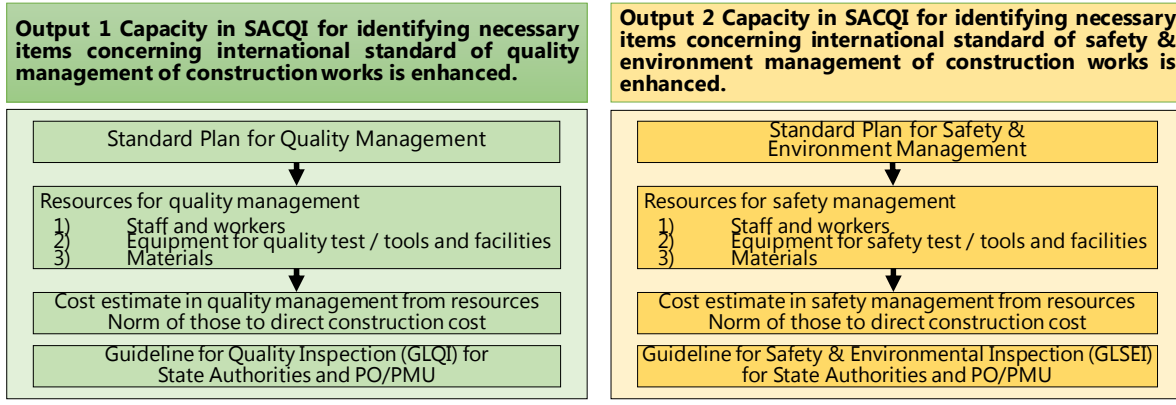
**Outputs**



**Details**

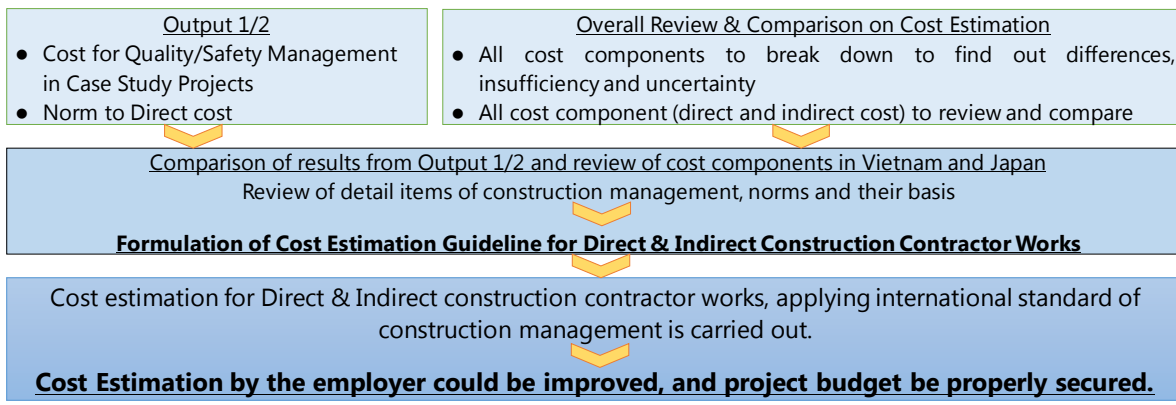
**OUTPUT 1-3 IMPROVEMENT BEFORE TENDER**

**Capacity Enhancement in SACE/SACQI for Cost Estimation in Construction Works, When Applying International Standard of Construction Management**

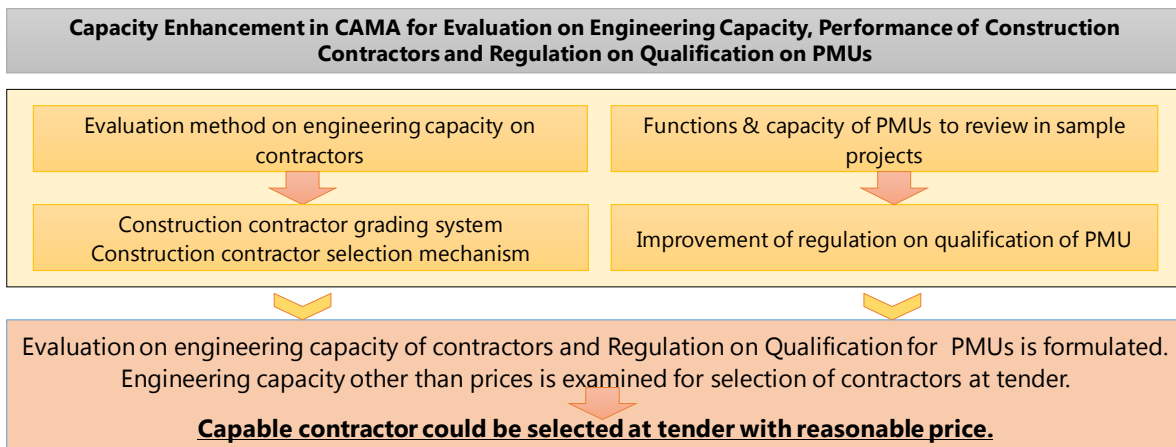


Integration to Output 3

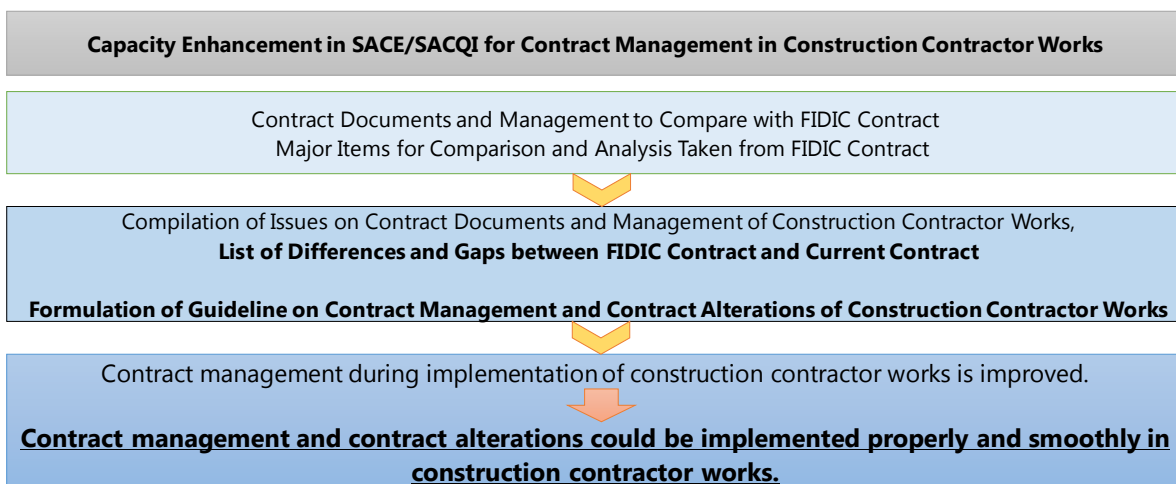
**Output 3 Capacity in SACE / SACQI for integrating international standard of construction management into the cost estimation for direct & indirect construction contractor works is enhanced.**



## **OUTPUT 4 IMPROVEMENT AT TENDER**



## **OUTPUT 5 IMPROVEMENT DURING IMPLEMENTATION**



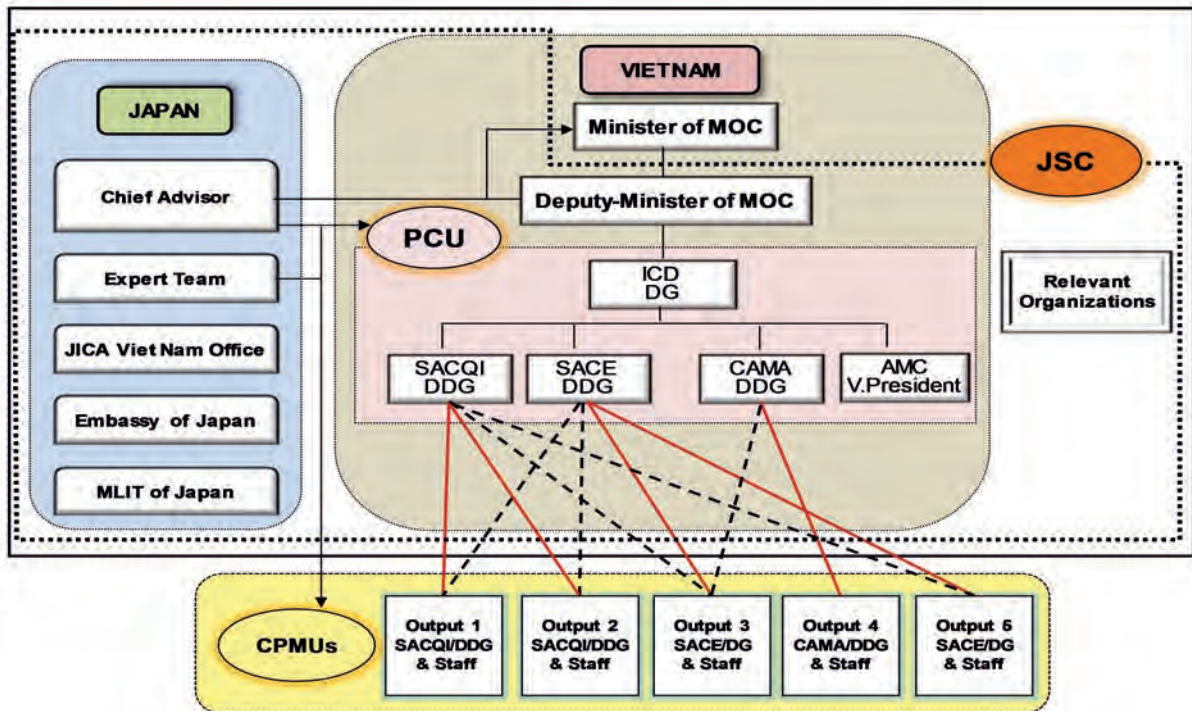
## **DIALOGUES WITH CONSTRUCTION INDUSTRY, TRAINING WORKSHOP**

Dialogues with Construction Industry (VACC / VECAS / OCAJI/ Others)	
Dialogue (0)	Comments on outputs prior to guidelines etc. from Construction industries were received and compiled as of March 2016.
Dialogue (1)	Dialogues on Output 1-3 were complete in April 2016. Opinions on Output 1-3 were collected and incorporated in output documents.
Dialogue (2)	Dialogues on Output 4-5 were complete in March 2017. Opinions on Output 4-5 were collected and incorporated in output documents.
Implementation of Training Workshop	
<b>Concept of Training Workshop</b> Regulations in Viet Nam & Output Documents to present in one set To collect comments / opinion from participants	
<b>Program:</b>	<b>Safety Management, Quality Management, Engineering Capacity, Cost Estimation and Contract Management, and laws and regulations of Viet Nam related to each Output</b>
<b>Presenter:</b>	<b>JICA Experts and Counterpart</b>
<b>Location &amp; Date:</b>	<b>Ha Noi at end of November in 2016</b>
	<b>Da Nang &amp; Ho Chi Minh City at beginning of December in 2016</b>
<b>Location &amp; Date:</b>	<b>Ha Noi, Ho Chi Minh City and Can Tho at middle of June in 2017</b>
	<b>(Engineering Capacity and Contract Management only)</b>
	<b>Ha Noi, Da Nang &amp; Can Tho at end of November in 2017</b>
	<b>Ho Chi Minh City at beginning of December in 2017</b>
	<b>(Quality &amp; safety management and cost estimation)</b>
<b><u>Link with construction Industry could be strengthened and regulations for construction management of public works be disseminated.</u></b>	



**Implementation Structure**

- 1) Implementation Agency: Ministry of Construction (MOC)
- 2) Joint Steering Committee: Vice Minister of MOC (Chairman)  
 Project Coordination Unit (PCU): Consisting of ICD/SACE/SACQI/CAMA/AMC  
 Japan Input: Chief Adviser, Expert Team (KEI, C-NEXCO, MEX)
- 3) Counterpart: International Cooperation Department (ICD)  
 State Authority for Construction Economics (SACE)  
 State Authority for Construction Quality Inspection (SACQI)  
 Construction Activities Management Authority (CAMA)  
 Academy of Managers for Construction and Cities (AMC)



**Schedule**

Work Activities	Period	2015			2016				2017				2018
		II	III	IV	I	II	III	IV	I	II	III	IV	I
Activities for Quality Management		■							□				
Additional Activities for Quality Management									■				R&I
Activities for Safety & Environment Management		■							□				
Additional Activities for Safety & Environment Management									■				R&I
Activities for Cost Estimation		■							□				
Additional Activities for Cost Estimation									■				R&I
Activities for Evaluation of Engineering Capacity etc. and PMU Function		■							□				
Activities for Contract Management		■							□				
Trainings Workshop									■		■		■
Dialogues with Construction Industries										■			

■ Preparation of Output Document    □ Review and Improvement

**JICA CCQS Project Team Office**

**Address: 4<sup>th</sup> Floor, Ministry of Construction, 37 Le Dai Hanh, Hai Ba Trung, Ha Noi**

**Tel: (84-4) 3976 0271 (ext 457)**

**KEI : Katahira & Engineers International**

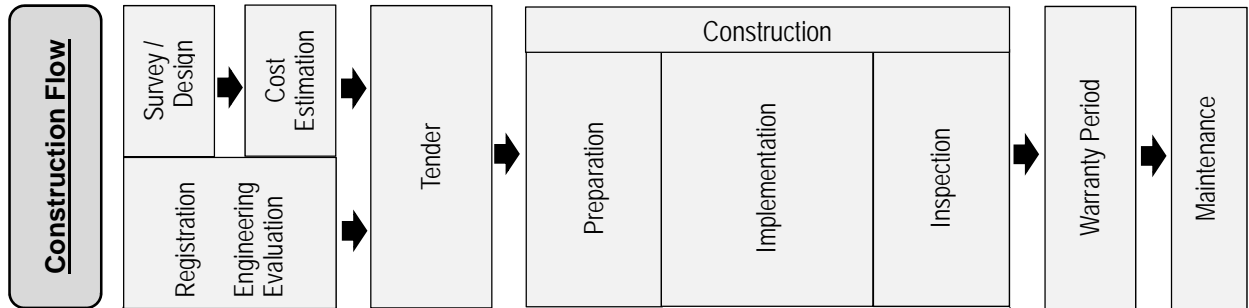
**C-NEXCO: Central Nippon Expressway Company Limited**

**MEX : Metropolitan Expressway Company Limited**

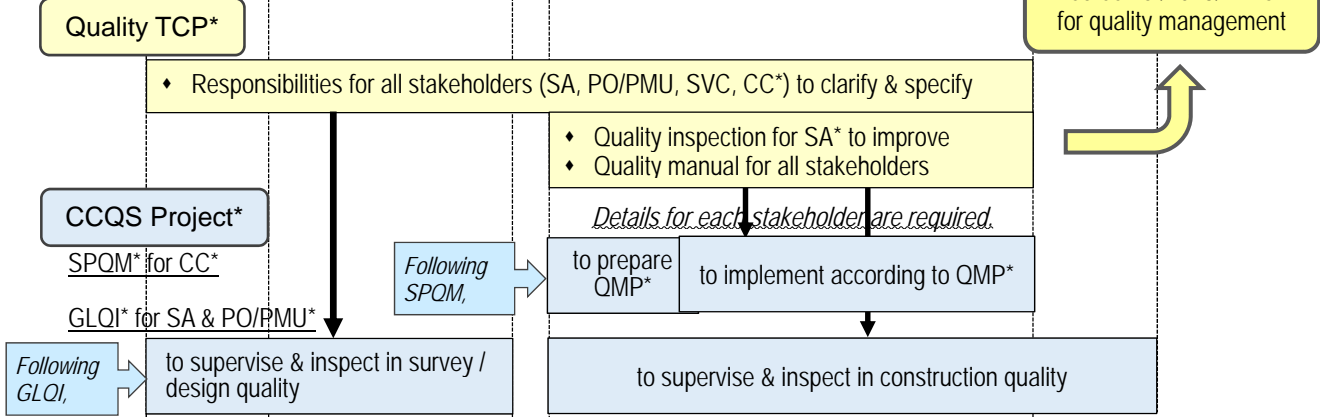


# Capacity Enhancement of Construction Management in Two JICA Technical Cooperation Projects (1)

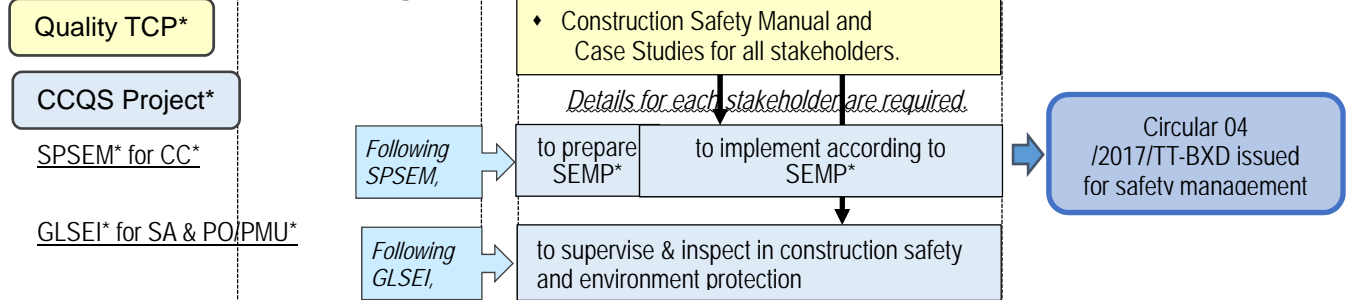
Construction accidents in quality and safety in construction site and facilities in use are recorded.  
 Issues (1) Construction management (quality, safety, contract etc.) is carried out inadequately.  
 (2) Cost estimation system does not correspond to market oriented economy.  
 (3) Engineering capacity on construction contractor is not fully evaluated.



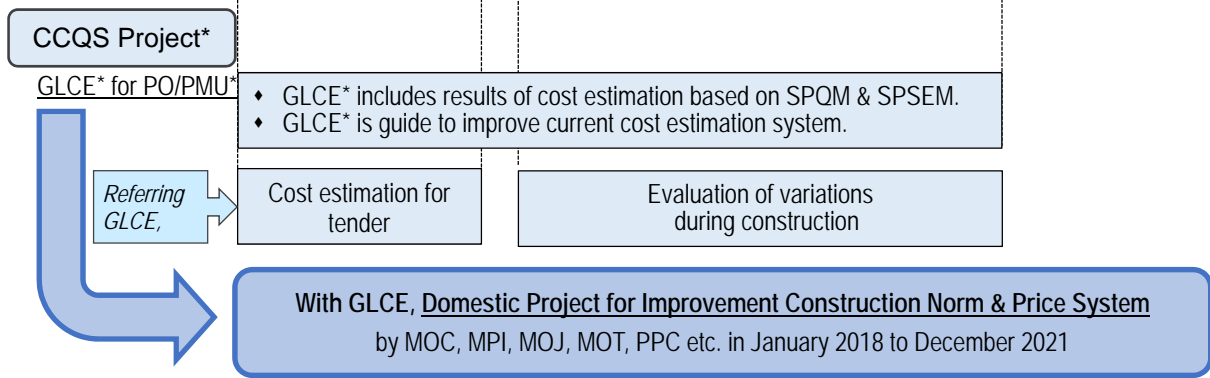
## Quality Management (\*refer abbreviation table below)



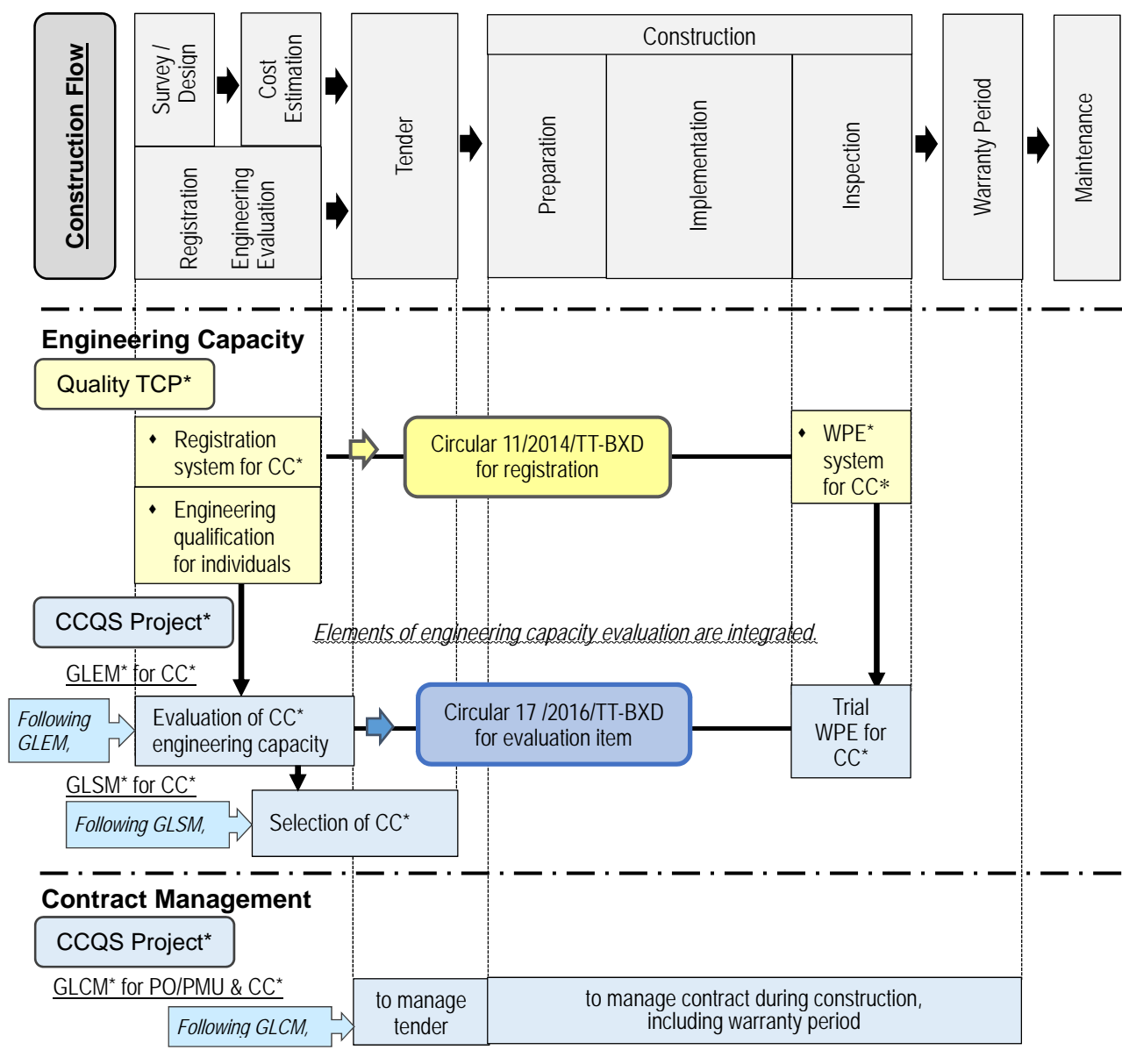
## Safety & Environment Management



## Cost Estimation



## Capacity Enhancement of Construction Management in Two JICA Technical Cooperation Projects (2)



### Abbreviation Table

Quality TCP	Project for Capacity Enhancement in Construction Quality Assurance in May 2010 to December 2013
CCQS Project	Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects in April 2015 to April 2018

SPQM	Standard Plan for Quality Management
QMP	Quality Management Plan
GLQI	Guideline for Quality Supervision and Inspection
SPSEM	Standard Plan for Safety and Environment Management
SEMP	Safety and Environment Management Plan
GLSEI	Guideline for Safety and Environmental Inspection
GLCE	Guideline on Cost Estimation for Construction Contractor Works
GLEM	Guideline for Evaluation Method on Engineering Capacity
WPE	Work Performance Evaluation
GLSM	Guideline for Selection Mechanism
GLCM	Guideline on Contract Management and Contract Alteration

SA	State Authority
PO	Project Owner
PMU	Project Management Unit
SVC	Supervision Consultant
CC	Construction Contractor

## Chapter 1 Project Outline

### 1.1 Project Background

The Government of the Socialist Republic of Viet Nam (hereinafter referred to as GOV) maintains sustainable economic growth and implements a large number of major infrastructure development projects. However due to insufficient project management and inadequate quality & safety management in construction works, lots of construction accidents in quality and safety are recorded. In addition, contract in construction projects in Viet Nam is sometimes implemented arbitrarily and therefore number of arguments during construction are reported. Hence, those obstruct smooth implementation of construction projects.

Problems in Construction Projects in Viet Nam
<ul style="list-style-type: none"><li>• Sufficient budgets for quality and safety management are not ensured and as a result, there are problems in quality and safety in construction projects.</li><li>• As contract clauses do not have flexibility, it is difficult to handle major infrastructure projects in which underground conditions could not be fully foreseeable beforehand.</li><li>• Regulations for technical capacity in individuals and companies are not coped with rapid increase in infrastructure projects and engineers on site do not have enough knowledge in legal and technical requirements in construction projects.</li><li>• Technical guidelines and manuals in construction management, including quality and safety management are not sufficiently prepared.</li></ul>

Japan International Cooperation Agency (JICA) implemented the technical cooperation project “the Project for Capacity Enhancement in Construction Quality Assurance” from May 2010 to December 2013 (hereinafter referred to as the Quality TCP) and the outputs in the Quality TCP are the quality inspection rules, capacity enhancement in quality management, compilation of safety manual and so on. However, cost estimation and contract management affecting quality, safety and effectiveness in construction projects are often implemented in improper manner. In order to improve the situation, GOV requested JICA to run a technical cooperation project and then the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (hereinafter referred to as CCQS Project) was decided to implement.

### 1.2 Project Purpose and Outputs

The Project is implemented to achieve the Project Purpose and to contribute the Overall Goal written below.

- ◆ Overall Goal: Construction projects are managed according to the international standard.
- ◆ Project Purpose: Regulations for management of public construction projects are improved.

The Project consists of five outputs as shown below.

- ◆ Output 1: State Authority of Construction Quality Inspection (SACQI) capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.
- ◆ Output 2: SACQI capacity for identifying necessary items concerning the safety management (SM) and the environment management (EM) of construction works is enhanced.
- ◆ Output 3: State Authority for Construction Economics (SACE, upgraded from Construction Economics Department in July 2017) capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.
- ◆ Output 4: Construction Activity Management Authority (CAMA) capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.
- ◆ Output 5: SACE & SACQI capacity for contract management of construction contractor works is enhanced.

Through the activities in Output 1 to 5, various capacities in the organizations (SACQI, SACE and CAMA) of the Ministry of Construction (MOC) are enhanced. Furthermore, output documents compiled in CCQS Project are disseminated through case studies, dialogues with construction industries and training workshops categorized in overall project management.

It is to note that one of the important roles of MOC is to prepare and issue legal documents and regulations in respect of construction project matters.

Hence, with the activities in CCQS Project and the above role of MOC, the Project Purpose (Regulations for management of public construction projects in Viet Nam are improved) is considered to be achieved.

In the Second Joint Steering Committee (JSC) meeting held in April 2016, the heads of the Component Project Management Unit (CPMU) for Output 1, 2 and 3 requested to extend the scope of activities and all members in the JSC basically accepted the ideas and requested to discuss further to specify additional activities clearly among the stakeholders (Counterparts (C/Ps) in MOC, JICA Viet Nam Office and JICA Headquarters, Chief advisor and expert team). Subsequently, two representatives from JICA Headquarters visited Viet Nam and discussed with the relevant departments in MOC including all heads of CPMUs and the Project team in May 2016.

On October 7, 2016, the contract alteration was signed and the additional activities were incorporated into the Project as follows.

[Output 1]

- ♦ To prepare Guideline for Quality Supervision and Inspection (GLQI) for State Authorities (SAs) & Project Owners (POs) / Project Management Units (PMUs)

[Output 2]

- ♦ To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works
- ♦ To prepare Guideline for Safety and Environmental Inspection (GLSEI) for SAs & POs/PMUs

[Output 3]

- ♦ To formulate Guideline on the Cost Estimation for Direct Construction Contractor Works

In the late 2017, it was decided that third training in Japan was postponed to February 21 to March 3, 2018 from November 2017 originally planned due to schedule arrangements of participants to training in Japan. In order to keep proper records of the third training in Japan in the Project Completion Report, the implementation period of CCQS Project was extended one month to April 2018.

Some other minor changes were discussed and agreed among all stakeholders, and those were incorporated into the Project Design Matrix (PDM) version 6, which is shown in Table 1-1.

All PDMs (version 1 to 6) are compiled in Appendix 1.

**Table 1-1 Project Design Matrix (PDM) ver. 6**

**Project Title: Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects**

**Project Period: April 2015 to April 2018 (36 months)**

**Target Group: Engineers from SACE, SACQI, and CAMA**

**Target Area: Whole Country**

**Date: 31 January 2018**

**Target Organization: State Authority for Construction Economics (SACE), State Authority of Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)**

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b></p> <p>Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.</p> <p>2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Cost estimation”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project.</p> <p>*Similar organization; Training center for staff of contracting ministry/agency</p> <p>3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics</p> <p>2. Training record of AMC and the similar organizations.</p> <p>3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>
<p><b>Project Purpose</b></p> <p>Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p> <p>*the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic</p> <p>2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders.</p> <p>2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>
<p><b>Outputs</b></p> <p>1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.</p>	<p>1-1. Standard Plan for QM (SPQM) is prepared by December 2015.</p> <p>1-2. Cost of QM for case-studied projects is estimated by February 2016.</p> <p>1-3. Guideline for Quality Inspection (GLQI) for State Authorities (SAs) &amp; POs/PMUs is prepared by September 2017.</p>	<p>1-1. SPQM and the prepared date</p> <p>1-2. Estimated QM cost and the completed date</p> <p>1-3. GLQI and the prepared date</p>	<p>- C/P bodies work in close cooperation each other.</p>
<p>2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) and the environment management (EM) of construction works is enhanced.</p>	<p>2-1. Standard Plan for SM (SPSM) is prepared by December 2015.</p> <p>2-2. Cost of SM for case-studied projects is estimated by February 2016.</p> <p>2-3. Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities (SAs) &amp; POs/PMUs is prepared by September 2017.</p>	<p>2-1. SPSM and the prepared date</p> <p>2-2. Estimated SM cost and the completed date</p> <p>2-3. GLSEI and the prepared date</p>	
<p>3. (SACE) Capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.</p>	<p>3-1. “Guideline on the cost estimation for indirect construction contractor works (GLCE-1)” is submitted to MOC by March 2016 for approval.</p> <p>3-2. “Guideline on the cost estimation for direct construction contractor works (GLCE-2)” is submitted to MOC by September 2017 for approval.</p> <p>3-3. More than 70 % of participants of trainings/seminars on “Guideline on the cost estimation for construction contractor works (GLCE)” understand the contents.</p> <p>3-4. Draft circular for authorizing GLCE is submitted to MOC by October 2017 for approval.</p>	<p>3-1. &amp; 3-2. “Guideline on the cost estimation for direct / indirect construction contractor works” and the submitted date &amp; the minutes of JSC</p> <p>3-3. Participants list and the questionnaire result</p> <p>3-4. Draft circular and the submitted date &amp; the minutes of JSC</p>	

The Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project)

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. “The evaluation method on engineering capacity of const.-contractors” is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of trainings/seminars on “the evaluation method on engineering capacity of const.-contractors” understand the contents. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of “const.-contractor grading system” is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. “The evaluation method on engineering capacity of const.-contractors” and the submitted date & the minutes of JSC 4-2. Participants list and the questionnaire result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of “const.-contractor grading system” and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date	
5. (SACE & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. “Guideline on contract management” is submitted to MOC by February 2017 for approval. 5-2. “Guideline on contract alternation” is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of participants of trainings/seminars on the above guideline understand the contents.	5-1. & 5-2. “Guideline on contract management” & “Guideline on alternations of contract” and the submitted date & the minutes of JSC 5-3. Participants list and the questionnaire result	
Activities		Inputs	
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare SPQM following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 1-4. To prepare Guideline for Quality Inspection (GLQI) for SAs & POs/PMUs	(The Japanese side) 1. Long-term Expert - Chief Advisor 2. Short-term Experts 1) Team leader / Construction management 2) Deputy team leader / Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation (1) 4) Quality management (1) 5) Quality management (2) 6) Quality management (3) 7) Quality management (4) 8) Quality management (5) 9) Safety management (1) 10) Safety management (2) / Environment management (1) 11) Safety management (3) / Environment management (2) 12) Warranty and insurance / Monitoring and evaluation 13) Construction contractor grading system 14) Training and seminar arrangement (1) 15) Training and seminar arrangement (2) / Public relations / Cost estimation (2)	(The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.
2-1. To review the current practices of SM and EM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SPSM following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 2-4. To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works 2-5. To prepare Guideline for Safety and Environmental Inspection (GLSEI) for SAs & POs/PMUs			
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan 3-2. To formulate “Guideline on the cost estimation for indirect construction contractor works (GLCE-1)” 3-3. To formulate “Guideline on the cost estimation for direct construction contractor works (GLCE-2)” 3-4. To prepare draft circular for authorizing “Guideline on the cost estimation for construction contractor works (GLCE)” 3-5. To carry out trainings/seminars on the above GLCE for dissemination 3-6. To compile the training program and the seminar materials on the above GLCE			

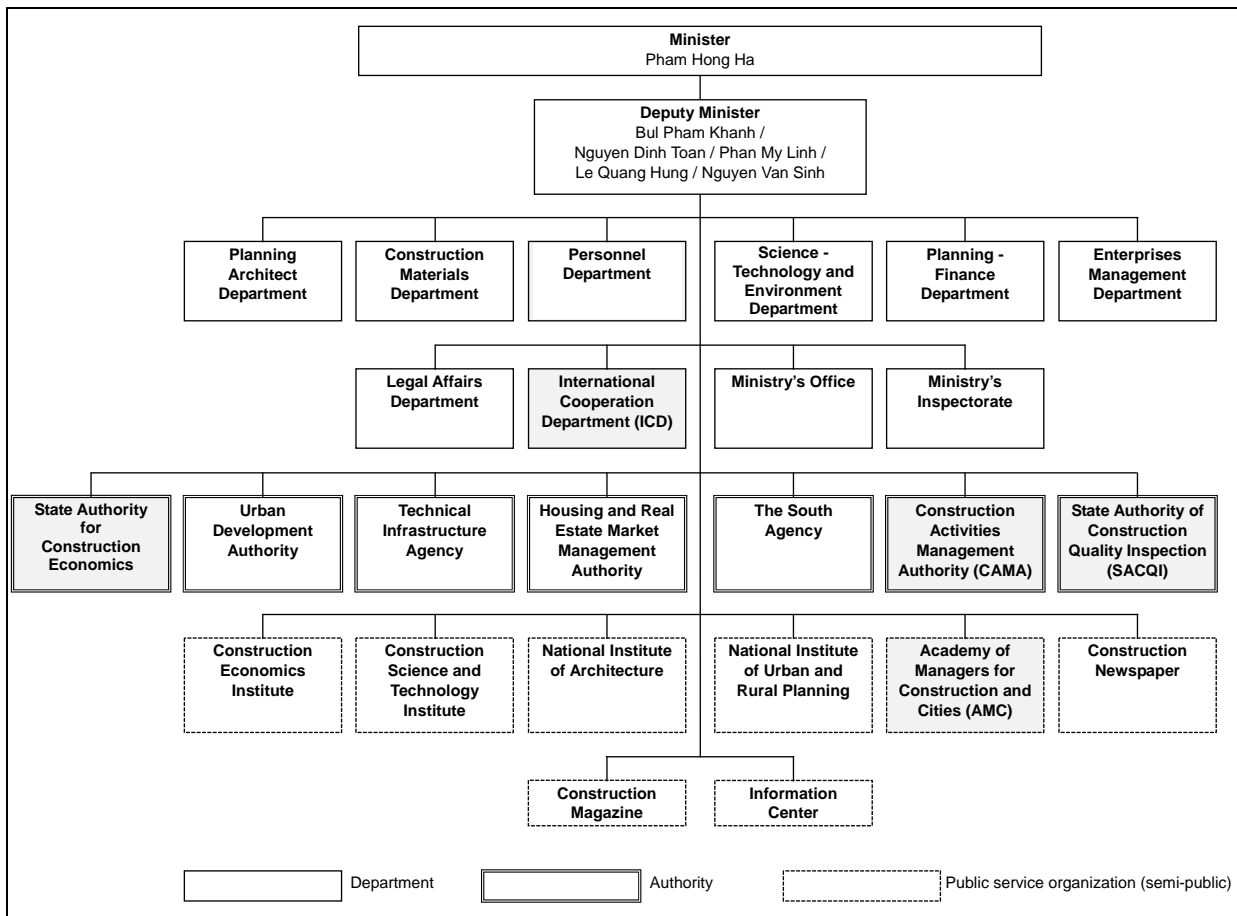
Activities	Inputs		Pre-condition
4-1. To identify problems on (i)evaluation of const.-contractors*4 engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out trainings/seminars of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs	3. C/P Training:10 persons/year x 3times  4. Cost for holding trainings and seminars under the Project		- Jurisdiction of MOC is maintained.
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) 5-5. To carry out trainings/seminars on the above GLCM for dissemination 5-6. To compile the training program and seminars materials on the above GLCM			

- \*1 CM: construction management
- \*2 EM: environment management
- \*3 QM: quality management,
- \*4 SM: safety management,
- \*5 const.-contractor: construction contractor

### 1.3 Implementation Agency

- (1) Implementation Agency : Ministry of Construction- MOC
- (2) Counterparts : State Authority for Construction Economics- SACE  
: State Authority of Construction Quality Inspection- SACQI  
: Construction Activity Management Authority- CAMA

The organization of MOC is shown below. Decree 81/2017/ND-CP defines that MOC is a governmental agency which performs the function of state management on construction planning, architecture; urban development; technical infrastructure in urban centers, industrial parks, economic zones and hi-tech parks; dwelling houses and office buildings; real estate market; building materials; and performs the state management of public services in the domains under its state management.



Note: Counterpart and related organizations are shadowed.

Source: Homepage of MOC

**Figure 1-1 MOC Organization**

Functions of counterparts and related organizations stipulated in legal documents are summarized below.

Organization	Functions
SACE	<ol style="list-style-type: none"> <li>1) Development of guidelines, orientations, strategies, mechanisms, policies, legal documents, instruction documents for construction economics and urban economics</li> <li>2) Guidance, supervision and inspection on the implementation of mechanisms, policies, the legal documents on construction economics and urban economics</li> <li>3) Evaluation and report on the implementation of mechanisms, policies on construction economics and urban economics</li> </ol>

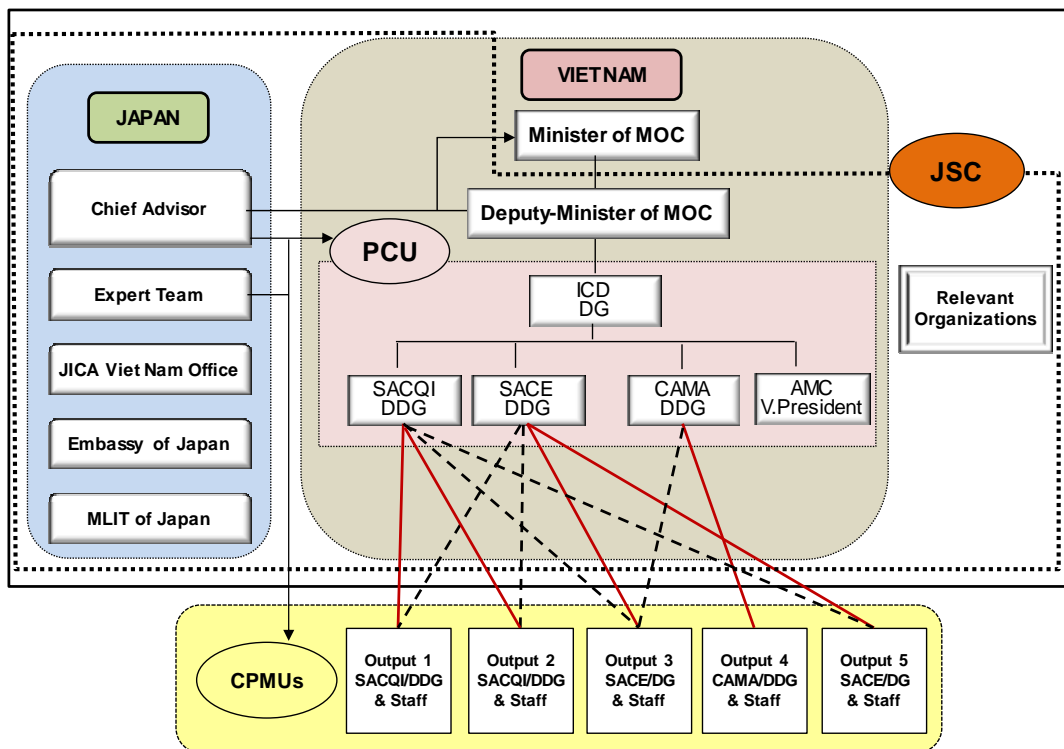


Organization	Functions
	4) Coordination of other units, organizations involved, the local for performing state management on construction economics and urban economics 5) Guidelines, inspections of preparation and management of the construction cost
SACQI	1) Formulation of policy, program, regulations and guidelines regarding construction quality management 2) Acceptance at completion on surveys, designs, constructions and supervisions 3) Guidance and inspection on constructed facilities for taking-over 4) Guidance and inspection on quality inspections and site training on quality management 5) Set up organization for quality review on accidents requested by Prime Minister, MOC Minister and relevant authorities 6) Inspection of the technical safety of construction to ensure the safety of workers 7) Secretariat for state committee of construction acceptance
CAMA	1) Feasibility study on construction projects 2) Permission and management of construction projects 3) Issuance of construction permit 4) Management on survey, design and construction 5) Formulation of rules in regard to development of human resources in construction field
ICD	1) Support and coordination with international organizations for international cooperation projects 2) Implementation of international cooperation projects
AMC	1) Trainings to management staff for updated information in construction and urban development 2) Trainings to other staff for rules and regulations in construction projects 3) Dissemination of research, guidelines, advanced technologies and management techniques 4) Consulting services to PMUs, staff in private entities and individuals for trainings and operations

## 1.4 Project Structure

### 1.4.1 Project Organizations

Project organization is shown below.



Source: Project team

Figure 1-2 Project Organization

Description below is prepared by refereeing the Record of Discussion (RD) signed by MOC and JICA in January 2015 and the Decision on acceptance of CCQS Project by Minister of Construction in October 2016 (No.1128/QD-BXD). In addition, Decision No. 1131a / QD-BXD in October 2016 regarding Project Coordination Unit and three other decisions regarding Component Project Management Unit in November and December 2016 are also referred.

#### Joint Steering Committee (JSC)

JSC is the committee to confirm the progress of the Project, discuss important matters and make decisions for better implementation of the Project or countermeasures if necessary. It will be held at the timing of the Project's milestone at least once per six months.

#### Project Coordination Unit (PCU)

PCU is the body to oversee activities of the Project binding Component Project Management Units. Director General of the International Cooperation Department (ICD) of MOC chairs PCU and bears overall responsibility for the administration and implementation of the Project. PCU is composed of Deputy Director Generals of SACE, SACQI, CAMA and the Vice President of AMC and some other staff in MOC. PCU members meet once a month to manage progress of the Project and ad-hoc meetings are held whenever necessary. Chief advisor and JICA experts attend at the meetings.

#### Component Project Management Unit (CPMU)

CPMUs are bodies to implement activities of the Project co-working with Chief advisor and JICA experts from Japanese side. Deputy Director General of SACQI is the head of CPMU for Output 1 and 2; Director General of SACE is the head for Output 3 and 5; Deputy Director General of CAMA is the head for Output 4. The heads of CPMUs bear responsibility for implementation of the Project component activities in charge.

#### Chief Advisor

From governmental characteristic of the Project, Chief advisor was dispatched from the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) of Japan. His roles are to provide advisory service to the Minister / Deputy Ministers of MOC through PCU as well as to provide technical support to the Project.

#### JICA Expert Team

JICA experts have expertise, such as construction management, evaluation of engineering capacity, cost estimation, quality management, safety and environment management, warranty and insurance, construction contractor grading system, training and seminar arrangement and public relations. Experts work together with relevant C/Ps in CPMUs. In addition, team leader and deputy team leader manage the Project overall together with Chief advisor and C/Ps. Team leader or deputy team leader attend every PCU meeting and JSC meeting.

Responsibilities for activities and outputs of the Project are clearly defined aforesaid in management view point. Taking effectiveness of the Project, activities for Output 1 to 3 are done in close relation, as some contents of Output 1 (quality management: QM) and 2 (safety management and environment management: SM and EM) are integrated in Output 3 (cost estimation for construction contractor works). Therefore it is required that CPMUs and JICA experts for Output 1 to 3 work together. Similarly, activities for Output 5 need to have inputs from SACE (contract management) and SACQI (defect liability and insurance).

As such, SACE / SACQI / CAMA as well as JICA experts need to have close relation and smooth coordination through channel of PCU and CPMUs, so that information in each CPMU could be in common to other CPMUs.

**Table 1-2 Relation of C/Ps and JICA Experts in Output**

Output	CPMU		JICA Expert
	main	others	
1 Quality Management	SACQI	SACE	JICA experts for construction management, quality management, safety & environment management and cost estimation
2 Safety & Environment Management	SACQI	SACE	
3 Cost Estimation	SACE	SACQI CAMA	
4 Engineering Capacity	CAMA	-	JICA experts for engineering capacity and grading system, and PMU
5 Contract Management	SACE	SACQI	JICA experts for construction management & warranty / insurance of construction contractor works

Source: Project team

In addition, dialogues with Vietnamese construction industry, training workshops have to be arranged during the Project in proper manner, and hence experts for training & seminar arrangement and public relations participate timely. In regard to trainings and seminars in future, advices from AMC are very crucial during the Project.

#### 1.4.2 Project Team

Table below shows MOC PCU and CPMU member and JICA team member.

**Table 1-3 MOC PCU and CPMU Member**

PCU		
1	Dr. Pham Khanh Toan	DG of ICD – Head of PCU
2	Ms. Truong Thi Thu Thanh	DDG of SACE – Member
3	Ms. Nguyen Thi Bich Hue	DDG of ICD – Member
4	Mr. Le Quang Mr. Ngo Lam	DDG of SACQI – Member until August 28, 2017 DDG of SACQI – Member from August 29, 2017
5	Dr. Nguyen Chi Hieu	DDG of CAMA – Member
6	Dr. Nguyen Anh Dung	Vice President of AMC – Member
7	Ms. Do Nguyet Anh	Senior official of ICD – Member
8	Ms. Nguyen Thi Hong	Deputy Head of Investment Division, Finance Dept. – Member
9	Mr. Nguyen Thanh Tung	Official of ICD – Member
10	Ms. Nguyen Hien Anh	Official of ICD – Member
11	Mr. Nguyen Chien Thang	MOC Office – Member
12	Ms. Le Thanh Ha	Deputy Head of Finance Division, MOC Office – Member

CPMU 1 (SACE): Output 3 and 5		
1	Dr. Pham Van Khanh	DG – Director of CPMU1
2	Ms. Truong Thi Thu Thanh	DDG – Deputy Director of CPMU1 – In charge of coordination, administration and finance
3	Mr. Hoang Anh Tuan	DDG – Deputy Director of CPMU1 – In charge of Output 3
4	Dr. Tran Van Khoi	DDG – Deputy Director of CPMU1 – In charge of Output 5
5	Mr. Phung Hung	Official – Project Accountant
6	Mr. Bui Thai Binh	Official – Coordinator
7	Mr. Ha Duc Thang	DDG level – Member – Output 3
8	Mr. Dang Hoai Nam	Official – Member – Output 3
9	Ms. Bui Ngoc Lan	Official – Member – Output 3
10	Ms. Nguyen Thuy Le	Official – Member – Output 3

CPMU 1 (SACE): Output 3 and 5		
11	Mr. Pham Huy Cuong	Head of Construction Price and Market Study Division, ICE – Member – Output 3
12	Mr. Vu Quoc Trong	Official – Member – Output 5
13	Mr. Ho Ngoc Son	Official – Member – Output 5
14	Mr. Nguyen Bac Thuy	Official – Member – Output 5
15	Mr. Nguyen Van Duong	Official – Member – Output 5
16	Ms. Phung Thi Huong Giang	Official – Member – Output 5
17	Mr. Vu Quyet Thang	Head of Strategy and Economic Management Mechanism of Construction Sector Study, ICE – Member – Output 5

CPMU 2 (CAMA): Output 4		
1	Dr. Nguyen Chi Hieu	DDG – Director of CPMU 2
2	Mr. Doan Manh Hung	Head of Office of CAMA – Deputy Director
3	Ms. Tran Thi Phuong Ha	Deputy Head of Office of CAMA – Chief Accountant
4	Ms. Lai Thi Tuyen	Official – Member
5	Ms. Hoang Thu Huong	Official – Member
6	Mr. Nguyen Kim Dung	Official – Member
7	Mr. Nguyen Thanh Binh	Official – Member
8	Mr. Pham Hoang Viet	Official – Member

CPMU 3 (SACQI): Output 1 and 2		
1	Mr. Le Quang Mr. Ngo Lam	DDG – Director of CPMU 3 until August 28, 2017 DDG – Director of CPMU 3 from August 29, 2017
2	Mr. Nguyen Xuan Phuong	Head of SACQI's Office – Deputy Director
3	Ms. Tran Thi Thu Dung	Chief Accountant of SACQI – Chief Accountant
4	Ms. Le Thuy Hang	Deputy Head of SACQI's Office – Member
5	Mr. Nguyen Hong Linh	Official, Secretary – Coordinator
6	Ms. Le Thi Mai Hoa	Official – Accountant
7	Mr. Phan Vu Anh	Head of Division 1 – Member
8	Mr. Duong Minh Nghia	Head of Division 2 – Member
9	Mr. Nguyen Viet Son	Head of Division 3 – Member
10	Mr. Nguyen Tuan Ngoc Tu	Head of Safety Division – Member
11	Mr. Le Ngoc Quy	Deputy Head of Safety Division – Member
12	Mr. Le Truong Giang	Official – Member
13	Mr. Nguyen The Anh	Official – Member
14	Mr. Tran Hoai Anh	Official – Member
15	Mr. Do Huu Bang	Official – Member
16	Mr. Do Duy Tao	Official – Member
17	Ms. Mai Thi Hong Nhi	Official – Member

Source: Project team

Because of additional activities in Output 1, 2 and 3, the followings are the latest JICA team member.

**Table 1-4 JICA Team Member**

JICA Team		
0	Mr. TAKADA Shoichi	Chief Advisor
1	Mr. YAMAUCHI Masafumi	Team Leader / Construction Management
2	Mr. NARISAWA Mitsuhiro	Deputy Team Leader / Construction Management / Evaluation of Engineering Capacity
3	Dr. KUSANO Seiichi	Cost Estimation (1)
4	Mr. MAMIYA Kei	Quality Management (1)
5	Mr. HAYASHI Susumu	Quality Management (2)
6	Mr. IWASHITA Akira	Quality Management (3)
7	Mr. YAMAUCHI Masafumi	Quality Management (4)
8	Mr. NARISAWA Mitsuhiro	Quality Management (5)
9	Dr. OGASAWARA Koyo	Safety Management (1)
10	Mr. SHINTANI Hiroshi	Safety Management (2) / Environment management (1)
11	Ms TAGUCHI Junko	Safety Management (3) / Environment management (2)
12	Ms SUZUKI Masako	Warranty and Insurance / Monitoring and Evaluation
13	Mr. NISHINO Ken	Construction Contractor Grading System
14	Mr. YASHIRO Shuichi	Training and Seminar Arrangement (1)
15	Mr. TOCHINAKA Masateru	Training and Seminar Arrangement (2) / Public Relations / Cost Estimation (2)
16	Ms Dao Lan Huong	Technical Assistant
17	Mr. Le Quoc Anh	Technical Assistant
18	Ms Pham Phuong Thao	Secretary
19	Ms Pham Hong Van	Secretary
20	Ms Nguyen Thuy Dung	Part-time Interpreter

Source: Project team



## **Chapter 2 Project Flow and Sequences**

Overall project flow and schedule are explained hereinafter with the following sections.

### **2.1 Project Implementation Flow**

Implementation flow of the Project was revised because of the incorporation of additional activities and extension of the Project period explained in Section 1.2 and shown in Figure 2-1, following the Project Design Matrix (PDM) version 6 in Table 1-1 in Chapter 1.

### **2.2 Plan of Operation**

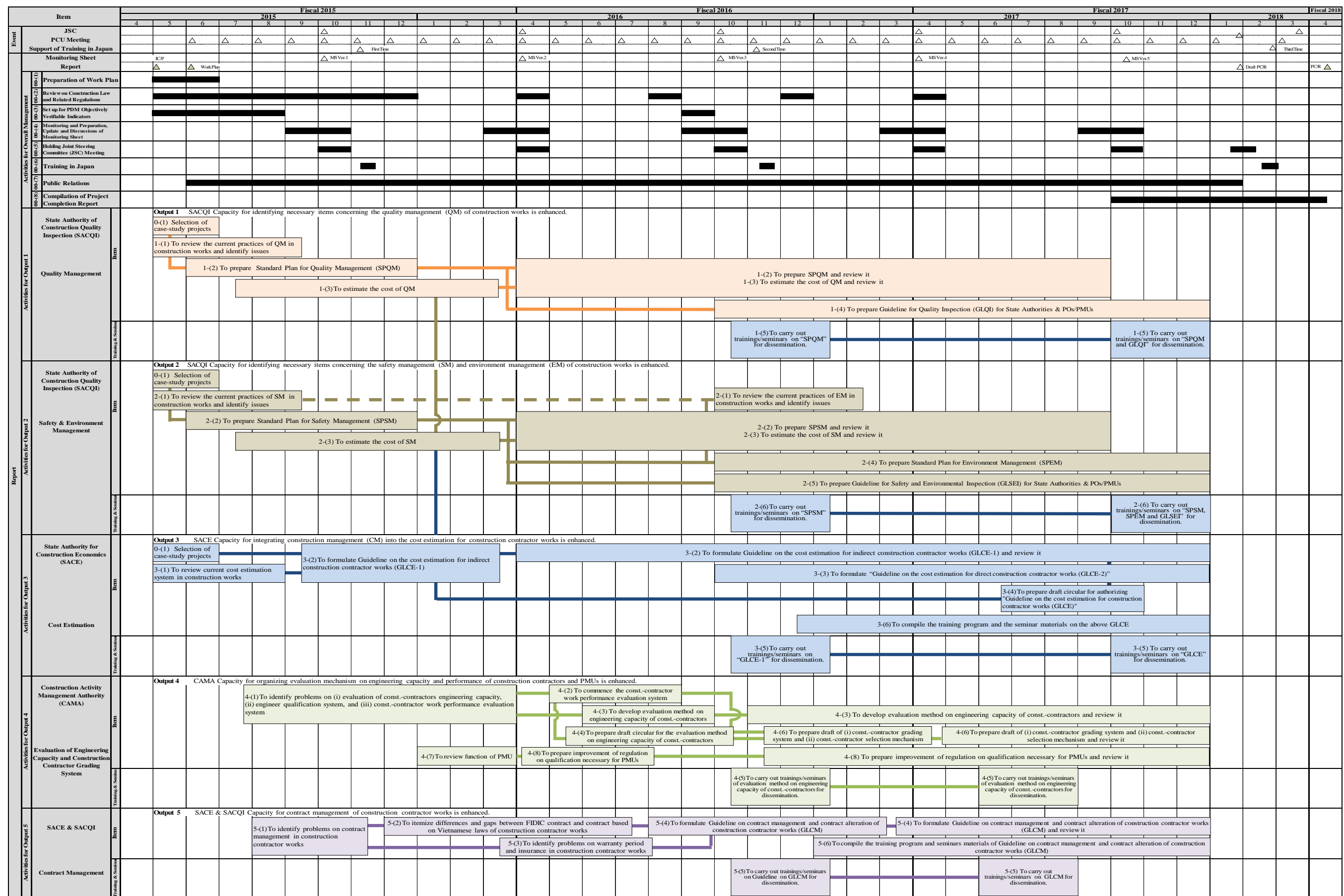
Plan of Operation was also revised with the same reason stated above and shown in Figure 2-2, following the PDM version 6 in Table 1-1 in Chapter 1 as well as Project Implementation Flow in Figure 2-1 below.

### **2.3 Work Breakdown Structure**

Work Breakdown Structure was also revised with the same reasons stated above and shown in Table 2-1, following the PDM version 6 in Table 1-1 in Chapter 1.

### **2.4 Assignment Schedule**

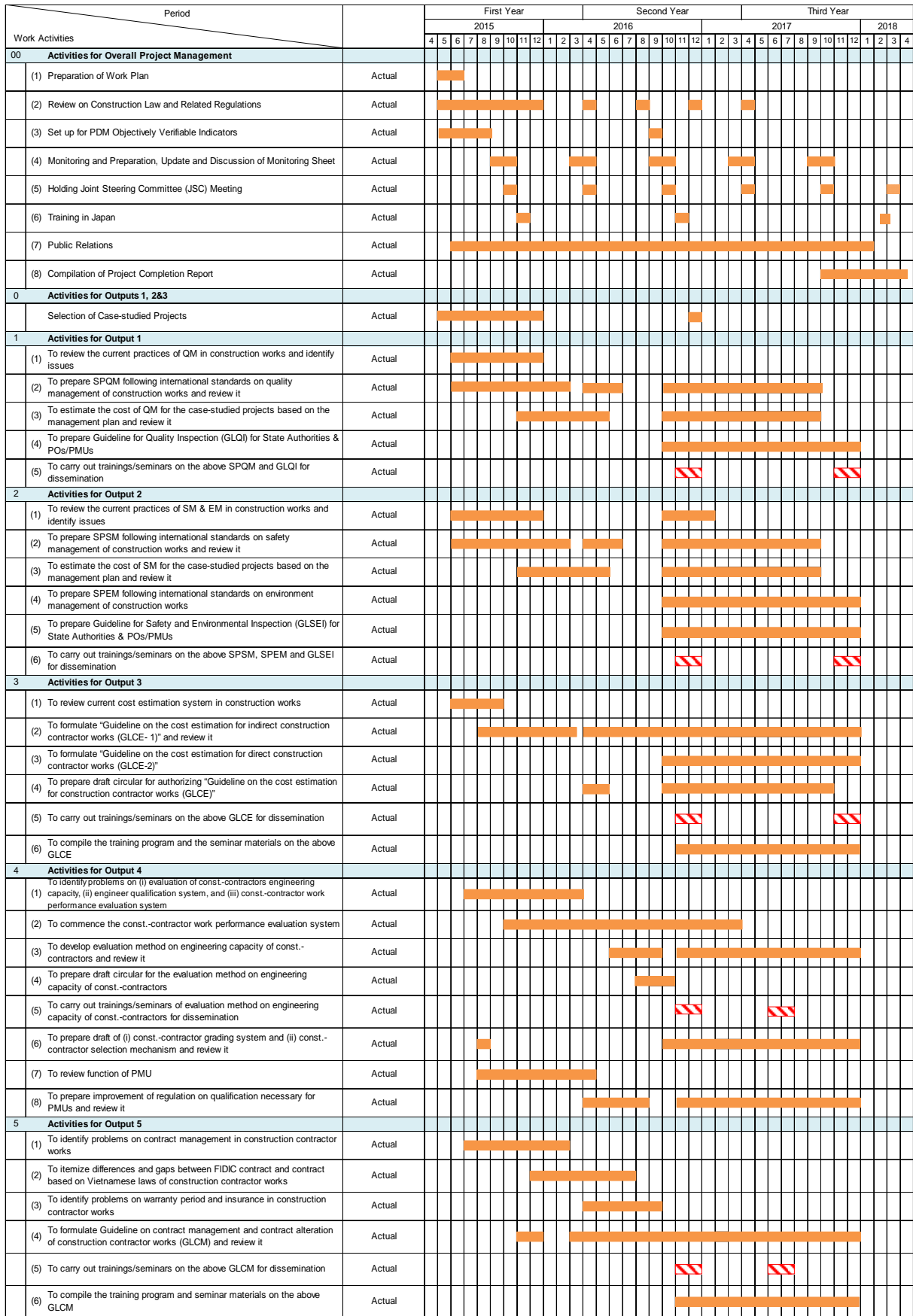
Assignment Schedule of JICA short-term experts was also revised with the same reasons stated above and in planned and actual one is shown in Figure 2-3, matching with the PDM version 6 in Table 1-1 in Chapter 1 as well as Project Implementation Flow in Figure 2-1 below.



Source: Project team

Figure 2-1 Project Implementation Flow





Example : [Orange bar] Activities in VN (Actual) [Red/White diagonal bar] training/seminar

Source: Project team

Figure 2-2 Plan of Operation

**Table 2-1 Work Breakdown Structure**

*\*number: refer to Table 1-3 in Chapter 1*

Project Purpose	Activity	Detailed Activity Items		JICA Team *		
				Main	Support	
Regulations for management of public construction projects are improved.	00 Activity for Overall Project Management	(1)	Preparation of Work Plan	0/1/2	All others	
		(2)	Review on Construction Law and Related Regulations	All	-	
		(3)	Set Up for PDM Objectively Verifiable Indicators	0/1/2	All others	
		(4)	Monitoring and Preparation, Update and Discussions of Monitoring Sheet	0/1/2	Ditto	
		(5)	Holding Joint Steering Committee Meeting	0/1/2	Ditto	
		(6)	Training in Japan	0	Ditto	
		(7)	Public Relations	15	Ditto	
		(8)	Compilation of Project Completion Report	0/1/2	Ditto	
	0	Activity for Output 1/2/3	(1)	Selection of Case-study Projects	3/4/5/9/10/11	0/1/2
	1	Activity for Output 1	(1)	To review the current practices of quality management (QM) in construction works and identify issues	4/5/6/7/8	3/9/10/11
			(2)	To prepare Standard Plan for QM (SPQM) following international standards on quality management of construction works and review it	4/5	3/9
			(3)	To estimate the cost of QM and review it	4/5	3/9
			(4)	To prepare Guideline for Quality Inspection (GLQI) for State Authorities & POs/PMUs	6/7/8	3/10/11
			(5)	To carry out trainings / seminars on the above SPQM and GLQI for dissemination	5/6/7/8/14	3/10/11
	2	Activity for Output 2	(1)	To review the current practices of safety management (SM) and environment management (EM) in construction works and identify issues	9/10/11	3/4/5/6/7/8
			(2)	To prepare Standard Plan for SM (SPSM) following international standards on safety management of construction works and review it	9	3/4/5
			(3)	To estimate the cost of SM and review it	9	3/4/5
			(4)	To prepare Standard Plan for EM (SPEM) following international standards on environment management of construction works	10/11	3/6/7/8
			(5)	To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & POs/PMUs	10/11	3/6/7/8
			(6)	To carry out trainings / seminars on the above SPSM, SPEM and GLSEI for dissemination	10/11/14	3/6/7/8
	3	Activity for Output 3	(1)	To review current cost estimation system in construction works	3	0/1/2/4/5/9
			(2)	To formulate "Guideline on the cost estimation for indirect construction contractor works (GLCE-1) and review it	3	0/1/2/4/5/9
			(3)	To formulate "Guideline on the cost estimation for direct construction contractor works (GLCE-2)"	3/15	0/1/2

Project Purpose	Activity	Detailed Activity Items	JICA Team *			
			Main	Support		
Regulations for management of public construction projects are improved.	3	Activity for Output 3	(4)	To prepare draft circulars for authorizing "Guideline on the cost estimation for construction contractor works (GLCE)"	3/15	0/1/2
			(5)	To carry out trainings / seminars on the above GLCE for dissemination	3/14/15	0/1/2
			(6)	To compile the training program and the seminar materials on the above GLCE	3/14/15	0/1/2
	4	Activity for Output 4	(1)	To identify problems on (i) evaluation of const.-contractors engineering capacity, (ii) engineer qualification system, and (iii) const.-contractor work performance evaluation system	2/13	0/1
			(2)	To commence the const.-contractor work performance evaluation system	2	0/1/13
			(3)	To develop evaluation method on engineering capacity of const.-contractors and review it	2	0/1/13
			(4)	To prepare draft circular for the evaluation method on engineering capacity of const.-contractors	2	13
			(5)	To carry out trainings / seminars of evaluation method on engineering capacity of const.-contractors for dissemination	2/14	0/1/13
			(6)	To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism and review it	13	0/1/2
			(7)	To review function of PMU	2/13	0/1
			(8)	To prepare improvement of regulation on qualification necessary for PMUs and review it	2/13	0/1
	5	Activity for Output 5	(1)	To identify problems on contract management in construction contractor works	1	0/12
			(2)	To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works	1	0/12
			(3)	To identify problems on warranty period and insurance in construction contractor works	12	1
			(4)	To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) and review them	1/12	0/2
			(5)	To carry out trainings / seminars on the above GLCM for dissemination	1/12/14	0/2
			(6)	To compile the training program and seminars materials of the above GLCM	1/12/14	0/2

Output 1	SACQI Capacity for identifying necessary items concerning quality management of construction works is enhanced.
Output 2	SACQI Capacity for identifying necessary items concerning safety management and environment management of construction works is enhanced.
Output 3	SACE Capacity for integrating construction management into the cost estimation for indirect construction contractor works is enhanced.
Output 4	CAMA Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.
Output 5	SACE & SACQI Capacity for contract management of construction contractor works is enhanced.

Source: Project team



## Chapter 3 Status and Major Issues of Construction Investment Project

### 3.1 Infrastructure Investment

In Viet Nam, infrastructure development by economic sector falls into the following five categories:

- i. Transport infrastructure
- ii. Agricultural infrastructure
- iii. Industry infrastructure
- iv. Building work infrastructure
- v. City facility infrastructure

Table 3-1 shows magnitudes of investment from 2008 to 2014.

**Table 3-1 Infrastructure Investment by Economic Sectors**

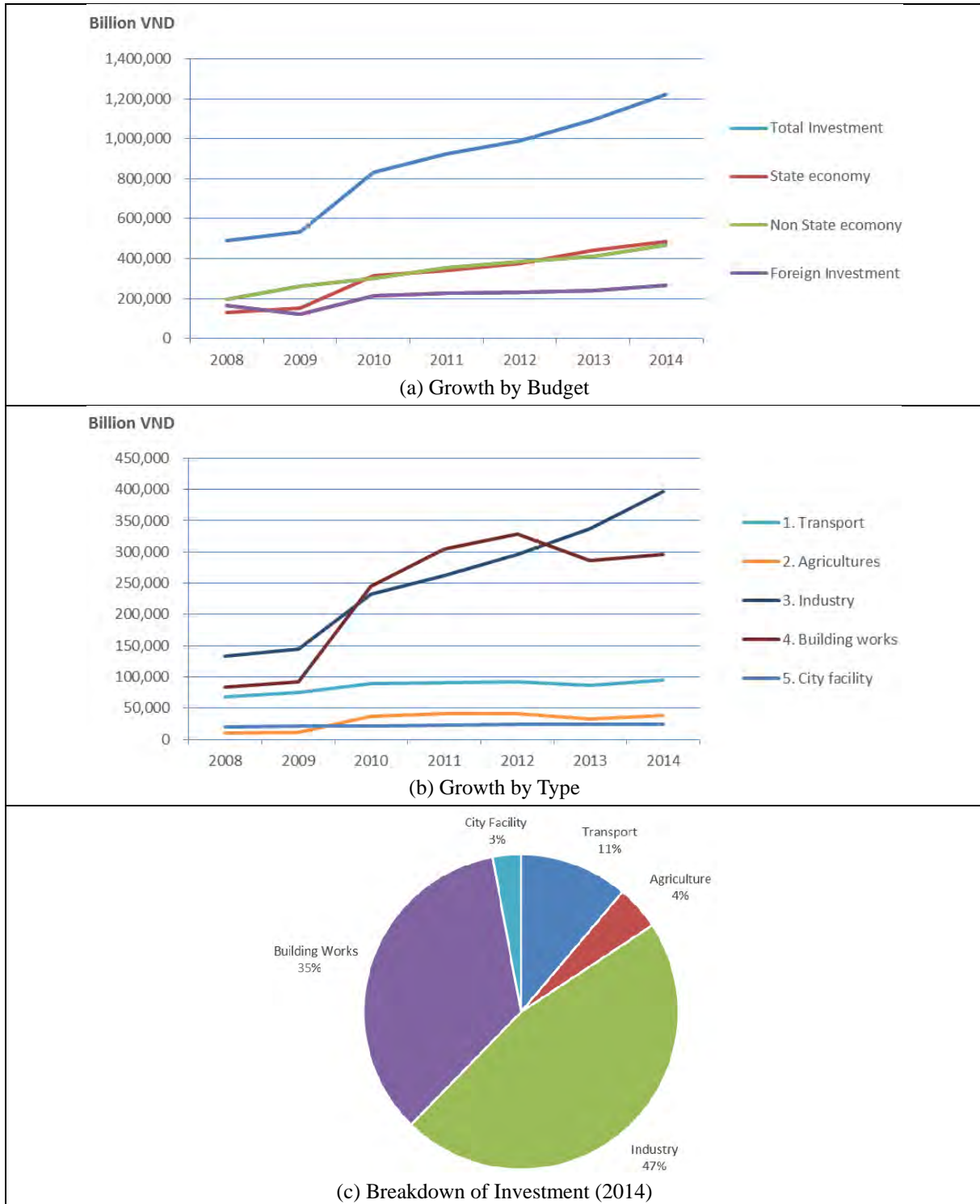
*Unit: Billion VND*

No	Economic Sector	Year						
		2008	2009	2010	2011	2012	2013	2014
<b>Total Investment</b>		<b>488,701</b>	<b>533,369</b>	<b>830,278</b>	<b>924,495</b>	<b>989,300</b>	<b>1,094,542</b>	<b>1,220,724</b>
1	State economy	128,367	150,754	316,285	341,555	374,300	441,924	486,804
2	Non State economy	196,248	260,755	299,487	356,049	385,025	412,506	468,513
3	Foreign Investment	164,086	121,860	214,506	226,891	229,975	240,112	265,407
<b>In which: Investment in some sector</b>		<b>315,478</b>	<b>340,958</b>	<b>624,633</b>	<b>719,613</b>	<b>780,669</b>	<b>765,032</b>	<b>852,211</b>
<b>1. Transport</b>		<b>67,966</b>	<b>74,540</b>	<b>89,174</b>	<b>90,372</b>	<b>91,553</b>	<b>85,724</b>	<b>95,241</b>
1.1	Roads, bridges and Ports	66,776	69,236	65,222	66,111	66,054	65,905	75,311
1.2	Airports	510	324	13,752	13,911	14,362	10,969	12,731
1.3	Railways	680	980	10,200	10,350	11,137	8,850	7,199
<b>2. Agricultures</b>		<b>9,524</b>	<b>11,531</b>	<b>36,500</b>	<b>40,484</b>	<b>40,896</b>	<b>32,464</b>	<b>38,725</b>
2.1	Irrigations	7,424	9,231	25,150	28,321	28,563	22,097	25,286
2.2	Channels, pumping stations, internal irrigation gates, etc.	2,100	2,300	11,350	12,163	12,333	10,367	13,439
<b>3. Industry</b>		<b>133,723</b>	<b>145,114</b>	<b>232,395</b>	<b>261,355</b>	<b>295,603</b>	<b>336,842</b>	<b>397,066</b>
3.1	Energies (hydro-power, thermal-power, etc.)	43,981	52,689	70,491	75,347	77,660	89,382	121,399
3.2	Processing industry	89,742	92,425	161,904	186,008	217,943	247,460	275,667
<b>4. Building works</b>		<b>84,083</b>	<b>92,246</b>	<b>245,060</b>	<b>304,105</b>	<b>329,171</b>	<b>286,145</b>	<b>296,627</b>
4.1	Housing	58,630	64,590	209,441	261,577	279,805	242,715	246,404
4.2	Schools	16,521	17,426	23,580	27,273	30,767	28,447	33,231
4.3	Hospital	8,932	10,230	12,039	15,255	18,599	14,983	16,992
<b>5. City facility</b>		<b>20,182</b>	<b>21,527</b>	<b>21,504</b>	<b>23,297</b>	<b>23,446</b>	<b>23,857</b>	<b>24,552</b>
5.1	Water supply and drainage. Sewage treatment (cleanup works, etc.)	20,179	21,523	21,504	23,297	23,446	23,857	24,552

Source: Ministry of Planning and Investment

Figure 3-1 is developed from Table 3-1 the above and these indicate that total investment shows strong growth to be doubled from 2009 to 2014. As seen, both state budget projects and non-state budget projects show a rapid growth in investment while foreign investment grows at a steady rate.

Of all infrastructure investment, those in the industry sector occupy 47% and the building work sector occupy 35%, followed by the investment in the transport sector (11%), the city facility (3%) and the agriculture (4%) in 2014. Looking at breakdowns in the building work investment, the housing investment is dominant, occupying 83% of all investment and surpassing school (11%) and hospital investment (6%). Likewise, road, bridge and port investment occupy a large proportion of 79% among all transport sector investment.



Source: Project team

**Figure 3-1 Trend of Infrastructure Investment**

### **3.2 Issues in Construction Investment Projects**

Issues in construction investment projects were collected at the beginning of the Project below.

[Overall]

- Importance of construction management is not sufficiently recognized among the stakeholders in construction works.
- There are not enough numbers of competent engineers for construction management.
- There are gaps and differences in contract formation and construction implementation between state budget projects and official development assistance (ODA) projects.

[Quality Management, Safety and Environment Management]

- Roles and responsibilities in quality and safety management in construction works are not clearly defined in the project owners (POs) / project management units (PMUs), the supervision consultants (SVCs) and the contractors.
- Knowledge and experiences in quality and safety management are inadequate among the stakeholders in construction works.
- Requirements for quality and safety management specified in contract documents are not estimated in certain extents in project budgets.
- There are no detailed regulations for environment protection during construction works, and therefore standard plan and guideline for environment management are required.

[Cost Estimation]

- The engineers for construction management are not sufficiently assigned and temporary facilities are not provided adequately in construction works, because those are not reflected in cost estimation for project budgets.
- Current cost estimation system has some remains during planned economy and is not flexible enough. Thus the system does not correspond to market oriented economy.
- Material, labor and machinery costs are not updated regularly and properly, and therefore those are not matched with current costs.
- Productivities on labor and machineries are also not updated for long time.

[Engineering Evaluation]

- Although there are engineer qualification system and contractor grading system, evaluation criteria are not clear enough.
- Accordingly, evaluation methods on engineering capacity of contractors are not established yet.
- Furthermore, evaluation on engineering capacity is not utilized in selection mechanism of the contractors at tender.
- The contractors submitting low price are awarded in most cases of construction works, and therefore the works implemented by those with relatively low engineering capacity may have defects, incidents and accidents.

[Contract Management]

- In state budget projects, roles and responsibilities in POs/PMUs and SVCs are not demarcated clearly and those are not informed to the contractors.
- Contract negotiations between POs/PMUs and the lowest bidders are usually taken place after bid submission and original contract terms are sometimes altered in the negotiations.
- Process for contract alterations takes long time in both state budget projects and ODA projects.
- Roles of the Engineer in FIDIC (the International Federation of Consulting Engineers) Conditions are not sufficiently disseminated and therefore contract management in construction works is sometimes obstructed and/or distorted.

The above issues are gradually improved with the progress of the Project, when the outputs are disseminated over Viet Nam.





## **Chapter 4 Activities for Overall Project Management**

### **4.1 Outline**

This Chapter onward describes activities in the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project) in accordance with the project implementation flow and the plan of operation.

This Chapter details activities for overall project management, not categorized in each output. Items covered here are Work Plan, Review on Construction Law and Related Regulations, Monitoring of Project, Joint Steering Committee and Project Coordination Unit, and Output Documents and Project Completion Report.

Chapter 5 to 14 mentions Case Study Projects, Output 1 to 5, Dialogues and Trainings, Public Relations, Training in Japan and Result of Joint Review.

### **4.2 Activities**

Activities for Overall Project Management carried out in the period of CCQS Project are stated below.

#### **4.2.1 Work Plan**

As soon as the Project commenced, the Inception Report (submitted to Japan International Cooperation Agency (JICA) in May 11, 2015) was presented to related organizations (International Cooperation Department: ICD, Construction Economics Department: CED (CED was upgraded to State Authority for Construction Economic (SACE) in July 2017), State Authority of Construction Quality Inspection: SACQI and Construction Activity Management Authority: CAMA) in the Ministry of Construction (MOC) and it was found that interpretation and recognition on the record of discussion (RD) signed by MOC and JICA in January 2015 appeared different, the detail of which shows below.

- ♦ Output 3: RD stipulates that guidelines on the cost estimation for quality management and safety management of construction works shall be formulated, while MOC intends to carry out comprehensive study for overview on the cost estimation system in Viet Nam.
- ♦ Output 5: RD stipulates that guidelines on contract management and contract alteration in construction works shall be formulated, by referring FIDIC (the International Federation of Consulting Engineers) contract, which means in construction contractor works, while MOC intends to carry out study on contract management in all stakeholders, including project management and supervision consultants etc.

Careful and respectful discussions between MOC (C/Ps) and JICA team were carried out in May 2015 to fill the gap of differences and the conclusion was as follows.

- ♦ Output 3: Cost components in direct cost and indirect cost regulated in Circular 4/2010/TT-BXD in Viet Nam are broken down for clear definition and compared with the standard in Japan to find out differences, insufficiency and uncertainty in standard in Viet Nam. Then, cost components other than pure direct cost shall be reviewed in detail, by referring those in standard in Japan. With these reviews, cost estimation guideline for indirect construction contractor works shall be formulated.  
Upon the formulation of cost estimation guideline for indirect construction contractor works, if MOC (C/Ps) requires to review on overall cost component, including pure direct cost, discussion with JICA shall be arranged for extension of scope.
- ♦ Output 5: Contract documents and contract management in selected construction projects shall be reviewed. Then differences and gaps between these projects shall be summarized by comparing with FIDIC contract (red book as for building and engineering works designed by the employer). Then guideline on contract management and contract alteration of construction

contractor works shall be formulated.

Upon the formulation of guideline on contract management and contract alteration of construction contractor works, if MOC (C/Ps) still requires to review on contract management for other stakeholders (project management and supervision consultants etc.), discussion with JICA shall be arranged for extension of scope.

Based on the discussions the above, modification of scope was explained to and accepted by all participants, including Deputy Minister and Senior Representative of JICA Viet Nam Office in the Kick-off meeting on June 11, 2015. Work plan was officially submitted in July 2015, after comments given were taken care.

#### 4.2.2 Review on Construction Law and Related Regulations

Relations of the laws/regulations and Output 1 to 5 in the Project are shown below, and the regulations were reviewed with C/Ps prior to formulating guidelines etc.

**Table 4-1 Relations of Regulations and Outputs in Project**

Major Regulations	Issuance	Output 1	Output 2	Output 3	Output 4	Output 5
Construction Law	June 2014	◎	◎	◎	◎	◎
Labor Code Chapter 9	June 2012	-	◎	○	-	○
Occupational Safety and Hygiene Law	June 2015	-	◎	○	-	○
Environmental Protection Law	June 2014	-	◎	○	-	○
Bidding Law	November 2013	-	-	○	◎	○
Decree 46 Quality Management	May 2015	◎	-	○	-	-
Decree 18 Environmental Protection	February 2015	-	◎	○	-	○
Decree 39 Occupational Safety and Hygiene	May 2016	-	◎	○	-	○
Decree 44 Occupational Safety and Hygiene	May 2016	-	◎	○	-	○
Decree 32 Cost Management	March 2015	○	○	◎	-	-
Decree 63 Contractor Selection at Bidding	June 2014	-	-	○	◎	○
Decree 59 Project Management	June 2015	-	○	○	◎	-
Decree 42 Amendment of Decree 59	April 2017	-	○	○	◎	-
Decree 37 Construction Contract	April 2015	○	○	○	-	◎

Note: ◎ close relation, ○ medium relation

Source: Project team

In addition, detailed rules (circulars etc.) under the laws and decrees were issued until first half of 2017. Related circulars to each Output listed below (full identification and shortened title with brackets) were complete to review with C/Ps.

- ♦ Output 1: Circular 03/2016/TT-BXD (Classification of Construction Works)  
Circular 26/2016/TT-BXD (Quality Management and Maintenance of Construction Projects)
- ♦ Output 2: Circular 04/2017/TT-BXD (Occupational Safety Management in Construction)  
Circular 14/2014/TT-BXD (Promulgating National Technical Code on Safety in Construction)  
Circular 19/2016/TT-BTNMT (Environment Protection Report)
- ♦ Output 3: Circular 05/2016/TT-BXD (Labor Cost in the Construction Cost Management)  
Circular 06/2016/TT-BXD (Management of Construction Investment Costs)
- ♦ Output 4: Circular 16/2016/TT-BXD (Construction Project Management)  
Circular 17/2016/TT-BXD (Eligibilities of Entities and Individuals in Construction Activities)
- ♦ Output 5: Circular 07/2016/TT-BXD (Adjustment of Construction Contract Prices)  
Circular 08/2016/TT-BXD (Construction Contracts)  
Circular 09/2016/TT-BXD (Construction Consultancy)  
Circular 30/2016/TT-BXD (Engineering, Procurement and Construction Contracts)

It is to note that Circular 04 listed the above was prepared based on the Standard Plan for Safety Management compiled in Output 2 and Circular 17 listed the above includes some recommendations for engineering capacity discussed in Output 4.

### **4.2.3 Monitoring of Project**

In the first six-month of the Project, Monitoring Sheet Version 1 was prepared with C/Ps and approved in the First JSC meeting in October 2015. Following the Monitoring Sheet Version 1, the Monitoring Sheet was updated with C/Ps every six-month and it was discussed and approved in the subsequent JSC meeting with some changes if necessary. The updated Monitoring Sheet was submitted to JICA Viet Nam Office at the same time.

All monitoring sheets prepared and submitted are enclosed in Appendix 2.

(1) Monitoring Sheet Version 1 (as of September 30, 2015)

Monitoring Sheet Version 1 consisting of summary and sheet I & II was compiled, including all objectively verifiable indicators in the Project Design Matrix (PDM) together (C/Ps and JICA team) as of September 30, 2015.

Input of JICA short term experts was planned 15 months and actually 15.5 months and ratio (actual MM / planned MM) was 103 %.

Generally overall progress was as per planned, though some activities were ahead and some were behind. None of the objectively verifiable indicators for outputs came to the time to verify as of the end of September 2015 and looking at the current progress, all outputs as well as project purpose would be foreseen to be achieved.

Project Monitoring Sheet was officially submitted to JICA Viet Nam Office after it was confirmed and approved in the First JSC meeting in October 2015.

In addition, Interim Report I as at the end of September 2015 was compiled, supplementing to the Monitoring Sheet and submitted together.

(2) Monitoring Sheet Version 2 (as of March 31, 2016)

Monitoring Sheet Version 2 consisting of summary and sheet I & II was compiled together (C/Ps and JICA team) as of March 31, 2016.

Input of JICA short term experts was planned 35.5 months and actually 34.5 months and ratio (actual MM / planned MM) was 97 %.

Generally overall progress was almost as per planned, though some activities were ahead and some were behind.

First draft of Standard Plan for Quality Management (SPQM) and Standard Plan for Safety Management (SPSM) in Output 1 and 2 were submitted to both CPMUs in December 2015 as per the original plan (objectively verifiable indicators 1-1 and 2-1) and after several discussions in subsequent CPMU meetings and the meetings between MOC Project Preparation Members (at the time PCU was not organized yet) and JICA team, draft SPQM and SPSM would be presented and submitted to MOC shortly. Cost estimations for quality management (QM) and safety management (SM) were being done (objectively verifiable indicators 1-2 and 2-2) and cost data for estimation were being provided to Output 3 for the guideline on the cost estimation for indirect construction contractor works (GLCE- 1).

The guideline on the cost estimation for indirect construction contractor works was prepared and discussed and would be agreed in CPMU (objectively verifiable indicators 3-1) and presented in the meeting between MOC Project Preparation Members and JICA team shortly.

Other objectively verifiable indicators did not come to the time to verify as of the end of March 2016 and looking at the current progress, all outputs as well as project purpose would be foreseen to be achieved.

Project Monitoring Sheet was officially submitted to JICA Viet Nam Office after it was confirmed and approved in the Second JSC meeting in April 2016.

In addition, Interim Report II as at the end of March 2016 was compiled, supplementing to the Monitoring Sheet and submitted together.

(3) Monitoring Sheet Version 3 (as of September 30, 2016)

Monitoring Sheet Version 3 consisting of summary and sheet I & II was compiled including the objectively verifiable indicators for additional activities explained in Section 1.2 in the PDM together (C/Ps and JICA team) as of September 30, 2016.

The input of JICA short term experts was 50.5 months. Ratio (actual MM / planned MM) was 93 %.

Generally overall progress was almost as per planned, though some activities were ahead and some were behind.

Achievement for some items in the activities in PDM as of the end of September 2016 is listed below.

**Table 4-2 List of Achievement of Project Output in April to September 2016**

Verifiable Indicators	Achievement	Actions taken
1-1 Preparation of SPQM	First draft SPQM was prepared and submitted to CPMU in December 2015.	SPQM was presented in Second JSC meeting and submitted to MOC in June 2016 with the letter.
1-2 Estimation of Cost for QM	Cost for QM was estimated in April 2016.	Cost data was provided to Output 3 for GLCE- 1.
2-1 Preparation of SPSM	First draft SPSM was prepared and submitted to CPMU in December 2015.	SPSM was presented in Second JSC meeting and submitted to MOC in June 2016 with the letter.
2-2 Estimation of Cost for SM	Cost for SM was estimated in May 2016.	Cost data was provided to Output 3 for GLCE- 1.
3-1 Submission of GLCE- 1	GLCE- 1 was presented and submitted to Second JSC meeting in April 2016.	GLCE- 1 was submitted to MOC in July 2016 with the letter.
4-5 Preparation of Improvement of Regulation on Qualification of PMUs	Improvement of Regulation on Qualification of PMUs was submitted to CPMU in June 2016.	Improvement of Regulation on Qualification of PMUs was submitted to MOC in August 2016 with the letter.

Source: Project team

Project Monitoring Sheet was officially submitted to JICA Viet Nam Office after it was confirmed and approved in the Third JSC meeting in October 2016.

In addition, Interim Report III as at the end of September 2016 was compiled, supplementing to the Monitoring Sheet and submitted together.

(4) Monitoring Sheet Version 4 (as of March 31, 2017)

Monitoring Sheet Version 4 consisting of summary and sheet I & II, was compiled together (C/Ps and JICA team) as of March 31, 2017.

The input of JICA short term experts was 74.8 months. Ratio (actual MM / planned MM) was 97 %.

Generally overall progress was almost as per planned, though some activities were ahead and some were behind.

Achievement for the items in the activities in PDM as of the end of March 2017, which were proceeded further from the description in Table 4-2 is listed below.

**Table 4-3 List of Achievement of Project Output in October 2016 to April 2017**

Verifiable Indicators	Achievement	Actions taken
4-1 Submission of Evaluation Method of Engineering Capacity	Evaluation Method was submitted to Third JSC meeting in October 2016.	Evaluation Method was submitted to MOC in October 2016 with the letter.
4-3 Submission of Draft Circular for authorizing Evaluation Method of Engineering Capacity	Draft Circular was submitted to Third JSC meeting in October 2016.	Draft Circular was submitted to MOC in October 2016 with the letter.
4-4 Submission of draft of Contractor's Grading System	Draft of Contractor's Grading System was submitted to Third JSC meeting in October 2016	Draft of Contractor's Grading System was submitted to MOC in October 2016 with the letter.
5-1/5-2 Submission of Guideline on Contract Management and Contract Alteration (GLCM)	GLCM was submitted to CPMU & PCU meeting in March 2017	GLCM was submitted to MOC in March 2017 with the letter.

Source: Project team

Project Monitoring Sheet was officially submitted to JICA Viet Nam Office after it was confirmed and approved in the Fourth JSC meeting in April 2017.

In addition, Interim Report IV as at the end of March 2017 was compiled, supplementing to the Monitoring Sheet and submitted together.

(5) Monitoring Sheet Version 5 (as of September 30, 2017)

Monitoring Sheet Version 5 consisting of summary and sheet I & II, was compiled together (C/Ps and JICA team) as of September 30, 2017.

The input of JICA short term experts is 98.4 months. Ratio (actual MM / planned MM) was 99.8 %.

Generally overall progress was almost as per planned, though some activities are ahead and some are behind.

Achievement for the items in the activities in PDM as of the end of September 2017, which were proceeded further from the description in Table 4-3 is listed below.

**Table 4-4 List of Achievement of Project Output in April to September 2017**

Verifiable Indicators	Achievement	Actions taken
4-2 More than 70 % of participants of trainings/seminars on "the Evaluation Method on Engineering Capacity of Const.-contractors" understand the contents.	Score of comprehension test in the training workshops in June 2017 was more than 70 %.	Comprehension test was conducted in the training workshops in June 2017.
5-3 More than 70 % of participants of trainings/seminars on the Guideline on Contract Management and Contract Alteration (GLCM) understand the contents.	Score of comprehension test in the training workshops in June 2017 was more than 70 %.	Comprehension test was conducted in the training workshops in June 2017.

Source: Project team

Draft of Construction Contractor Selection Mechanism (not listed in the verifiable indicators) was prepared and submitted to MOC in April 2017 with the letter.

Furthermore, as comments on SPQM and Estimation of Cost for QM (verifiable indicator 1-1 and 1-2) were given, both were reviewed and revised. Then, revised SPQM was submitted again to MOC in August 2017 with the letter and revised cost estimation for QM was provided to Output 3 in July 2017.

Project Monitoring Sheet was officially submitted to JICA Viet Nam Office after it was confirmed and approved in the Fifth JSC meeting in October 2017.

In addition, Interim Report V as at the end of September 2017 was compiled, supplementing to the Monitoring Sheet and submitted together.

(6) Final Monitoring at the end of CCQS Project

Overall review on achievements of CCQS Project is stipulated in Chapter 14, and achievement for the items in PDM at the end of the Project, which were proceeded further from the description in Table 4-4 is listed below.

**Table 4-5 List of Achievement of Project Output and Purpose in October 2017 to Project End**

Verifiable Indicators	Achievement	Actions taken
1-3 Preparation of Guideline for Quality Supervision and Inspection (GLQI) for State Authorities (SAs) and Project Owners (POs) / Project Management Units (PMUs)	Draft GLQI was prepared, submitted and presented in CPMU and PCU meeting in September 2017.	GLQI was presented in Fifth JSC meeting and submitted to MOC in October 2017 with the letter.
2-3 Preparation of Guideline for Safety and Environmental Inspection (GLSEI) for SAs and POs/PMUs	Draft GLSEI was prepared, and submitted to CPMU in September 2017.	GLSEI was presented in PCU and Fifth JSC meeting and submitted to MOC in October 2017 with the letter.
3-2 Submission of Guideline on the Cost Estimation for Direct Construction Contractor Works (GLCE- 2)	GLCE- 1 & 2 was agreed to combine and GLCE was presented and submitted to Fifth JSC meeting in October 2017.	GLCE was submitted to MOC in October 2017 with the letter.
3-3 More than 70 % of participants of trainings/seminars on the Guideline on the Cost Estimation for Construction Contractor Works (GLCE) understand the contents.	Score of comprehension test in the training workshops in November and December 2017 was more than 70 %.	Comprehension test was conducted in the training workshops in November and December 2017.
3-4 Submission of Draft Circular for authorizing GLCE	Draft Circular was submitted to MOC in October 2017 with the letter.	-
Project Purpose: More than half of all stakeholders consider the output documents approach the international level.	Feedback sheets submitted by participants in the training workshops in November and December 2017 show more than half consider the output documents approach the international level.	

Source: Project team

Standard Plan for Environment Management (SPEM) in Output 2 (not listed in the verifiable indicators) was agreed to combine with SPSM as Standard Plan for Safety and Environment Management (SPSEM), which was submitted to MOC in October 2017 with the letter. Training Program and Materials on GLCM and GLCE in Output 5 and 3 (not listed in the verifiable indicators) were also prepared, agreed in CPMU and submitted to MOC in December 2017 and January 2018 respectively with the letter.

Furthermore, additional statements were incorporated into GLSEI in Output 2, GLCE in Output 3 and GLCM in Output 5, after those were discussed and agreed in respective CPMUs. Then revised GLSEI and GLCM were submitted to MOC in December 2017 and GLCE was in January 2018 respectively with the letter.

#### 4.2.4 Joint Steering Committee and Project Coordination Unit

##### (1) Joint Steering Committee (JSC)

JSC shall be called for the following purposes in six-month interval. Chairman is head of implementation agency, Deputy Minister of MOC. The Minutes of Meeting for Kick-off and all JSCs are compiled in Appendix 3.

Items to Discuss in JSC
<ul style="list-style-type: none"><li>• To discuss about activities and approve outcomes in the Project in accordance with PDM and Monitoring Sheet</li><li>• To review overall progress and Monitoring Sheet and modify PDM as necessary</li><li>• To discuss about other important issues and decide the matters when necessary</li></ul>

##### 1) Kick-off Meeting

Kick-off meeting was arranged and held on June 11, 2015 attended by Deputy Minister of MOC, Senior Representative of JICA Viet Nam Office and all members of JSC shown in Figure 1-2 in Chapter 1. In the meeting, the work plan was presented and accepted, in which the stipulations in the original RD for Output 3 and 5 were modified aforesaid.

##### 2) First JSC Meeting

The First JSC meeting was held on October 13, 2015 and the Monitoring Sheet Version 1 showing progress and issues of the Project was explained and approved.

In the First JSC meeting, there were two requests from MOC to JICA team to have information in construction works in Japan, such as 1) information on ratio of labor cost in construction project, and 2) how packages in construction project are determined.

In response, JICA team made the following explanation with the papers in the meetings between MOC Project Preparation Members (at the time PCU was not organized yet) and JICA team in January and March 2016, marked with asterisk (\*) in the table briefing PCU Meetings shown in (2) below;

- 1) Ratio of Labor Cost in Construction Projects in Japan
- 2) Construction Package Size in Japan

##### 3) Second JSC Meeting

Second JSC meeting was held on April 13, 2016 and the Monitoring Sheet Version 2 showing the progress and issues of the Project was explained and approved. In addition, some output documents were prepared (SPQM, SPSM and GLCE- 1 in Output 1, 2 and 3) and then presented in the JSC meeting for approval.

In addition, the heads of CPMU for Output 1, 2 and 3 requested to extend the scope of activities and all members in the JSC basically accepted the ideas and requested to discuss further to specify additional activities clearly among the stakeholders.

##### 4) Third JSC Meeting

Third JSC meeting was held on October 12, 2016 and the Monitoring Sheet Version 3 showing the progress and issues of the Project was explained and approved. In addition, some output documents were complete (Evaluation Method on Engineering Capacity including Contractor Grading System and Improvement of Regulation on Qualification for PMUs in Output 4) and then presented in the JSC meeting for approval.

As additional activities requested in the Second JSC meeting were finalized, the contents were presented in the meeting as well.

Additional activities were incorporated in Project Design Matrix (PDM) version 3.

5) Fourth JSC Meeting

Fourth JSC meeting was held on April 12, 2017 and the Monitoring Sheet Version 4 showing the progress and issues of the Project was explained and approved. In addition, some output documents were complete (Contractor Selection Mechanism and GLCM in Output 4 and 5) and then presented in the JSC meeting for approval.

As some experts were replaced, those were reflected in Project Design Matrix (PDM) version 4.

6) Fifth JSC Meeting

Fifth JSC meeting was held on October 18, 2017 and the Monitoring Sheet Version 5 showing the progress and issues of the Project was explained and approved. In addition, additional output documents were complete (GLQI, SPSEM, GLSEI and GLCE in Output 1 to 3) and then presented in the JSC meeting for approval.

7) Special Meeting for Explanation of Draft Project Completion Report

Special meetings were held on January 26 and February 5, 2018 in Viet Nam and Japan respectively for explanation of draft Project Completion Report (PCR). The Project team (C/Ps and JICA experts) presented the draft PCR and discussed in the meetings. Comments given in the meetings and delivered later were incorporated into the final version of PCR.

(2) Project Coordination Unit (PCU)

PCU was officially set up at the end of 2016 when the project document by MOC was accepted. MOC Project Preparation Members so far fulfilled the functions of PCU and the meetings between MOC Project Preparation Members and JICA team were held once in a month to review status of the Project and discuss the issues during implementation of the Project from July 2015 and ended at the end of 2016.

From January 2017, PCU meetings were arranged generally once in a month for review and discussion on same subjects.

Date and items for discussions in the meetings are shown below.

**Table 4-6 List of Project Coordination Unit Meetings**

Date		Item for Discussions
1	July 17, 2015	<ol style="list-style-type: none"> <li>1. Nomination of C/Ps: No C/Ps list issued officially</li> <li>2. Case study project: Selection under state budget</li> <li>3. Construction industry: Paper explaining CCQSP to dispatch to relevant organizations.</li> <li>4. Project document by MOC: Check status</li> <li>5. Regular meeting: Agreed to be held once in a month</li> <li>6. PDM: Version 1 including verifiable indicators to be finalized</li> </ol>
2	August 4, 2015	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Project document by MOC: Check status</li> <li>3. Nomination of C/Ps: C/Ps to be within MOC and staff from other organizations to be called for participation in CPMU case by case</li> <li>4. Case study project: Selection under JICA loan &amp; state budget</li> <li>5. PDM: Discussion on verifiable indicators</li> </ol>
3	October 6, 2015	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Monitoring sheet: Preparation for First JSC meeting</li> <li>3. Project document by MOC: Check status</li> <li>4. Selection of case study projects: Selection under state budget</li> <li>5. Vietnamese construction industry: Collection of comments on outputs</li> <li>6. Training in Japan: Schedule</li> </ol>
4	November 5, 2015	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of First JSC meeting</li> <li>3. Case study project: Recommended to visit Lai Chau Hydropower Project</li> </ol>



Date		Item for Discussions
		<ol style="list-style-type: none"> <li>4. Project document by MOC: Check status</li> <li>5. Vietnamese construction industry: Collection of comments on outputs</li> <li>6. Statistic Data for Infrastructure Investment</li> <li>7. Training in Japan: Schedule</li> </ol>
5	December 8 2015	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Output documents: Progress of SPQM &amp; SPSM (Output 1 &amp; 2)</li> <li>3. JSC meeting: Minutes of First JSC meeting</li> <li>4. Case study project: Plan to visit Lai Chau Hydropower Project</li> <li>5. Project document by MOC: Check status</li> <li>6. Vietnamese construction industry: Collection of comments on outputs</li> <li>7. Statistic data for Infrastructure Investment in Viet Nam: Collection</li> <li>8. Training in Japan: Report</li> </ol>
6	January 14, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Output documents: Status and schedule of SPQM &amp; SPSM (Output 1 &amp; 2)</li> <li>3. JSC meeting: Minutes of First JSC meeting &amp; schedule for Second JSC meeting</li> <li>4. Case study project: Report of visit to Lai Chau Hydropower Project</li> <li>5. MOC project document: Check status</li> <li>6. Vietnamese construction industry: Collection of comments on outputs</li> <li>7. Statistic data for Infrastructure Investment in Viet Nam: Collection</li> <li>8. Training in Japan: Report</li> <li>9. Presentation of Ratio of Labor Cost in Construction Projects in Japan*</li> </ol>
7	March 14, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Presentation: SPQM &amp; SPSM (Output 1 &amp; 2)</li> <li>3. JSC meeting: Minutes of First JSC meeting &amp; schedule for Second JSC meeting</li> <li>4. MOC project document: Check status</li> <li>5. Dialogue with Vietnamese construction industry: Preparation &amp; schedule</li> <li>6. Presentation of Construction Package Size in Japan*</li> </ol>
8	April 8, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Presentation: SPQM, SPSM and GLCE- 1 (Output 1, 2 &amp; 3)</li> <li>3. JSC meeting: Agenda for Second JSC meeting</li> <li>4. Dialogue with Vietnamese construction industries : Schedule &amp; program</li> </ol>
9	May 10, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Second JSC meeting</li> <li>3. Training and Seminar: Preparation and schedule</li> <li>4. JICA headquarter missions: Schedule and appointment of discussion</li> </ol>
10	June 17, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Second JSC meeting</li> <li>3. Dialogue with Vietnamese construction industries: Results</li> <li>4. Training and seminar: Preparation and schedule</li> <li>5. Work performance evaluation (Output 4): Project selection for trials</li> </ol>
11	July 15, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Second JSC meeting &amp; schedule for Third JSC meeting</li> <li>3. Dialogue with Vietnamese construction industries: Results</li> <li>4. Training and Seminar: Preparation and schedule</li> <li>5. Work performance evaluation (Output 4): Project selection for trials</li> </ol>
12	August 05, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Second JSC meeting &amp; schedule for Third JSC meeting</li> <li>3. Dialogue with Vietnamese construction industries: Results</li> <li>4. Training and seminar: Preparation and schedule</li> <li>5. Work performance evaluation (Output 4): Project selection for trials</li> <li>6. Presentation: Improvement of Regulation of PMU Qualification (Output 4)</li> <li>7. Training in Japan: Schedule in 2016</li> <li>8. Project document: Check status</li> </ol>
13	September 14, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. PDM version 3: Explanation &amp; discussion of additional activities in Output 1 to 3</li> <li>3. JSC meeting: Minutes of Second JSC meeting &amp; schedule for Third JSC meeting</li> <li>4. Training and seminar: Preparation and schedule</li> <li>5. Presentation: Evaluation Method on Engineering Capacity</li> <li>6. Work performance evaluation (Output 4): Project selection for trials</li> <li>7. Training in Japan: Schedule in 2016</li> </ol>

Date		Item for Discussions
		8. Project document: Check status
14	October 7, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Schedule for Third JSC meeting</li> <li>3. Training and seminar: Schedule for three locations in November and December</li> <li>4. Work performance evaluation (Output 4): Project selection for trials</li> <li>5. Additional activities for Output 1 &amp; 2: New experts to introduce</li> <li>6. Training in Japan: Schedule in 2016</li> <li>7. Project document: Check status</li> </ol>
15	December 13, 2016	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Third JSC meeting</li> <li>3. Training and seminar: Report and discussions for future workshops</li> <li>4. Song Hau Project: Site visit and trials for WPE (Output 4)</li> <li>5. Second dialogue with Vietnamese construction industries: Schedule and agenda</li> <li>6. Training in Japan: Report</li> <li>7. Project Document: Check status</li> </ol>
16	January 13, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Third JSC meeting &amp; schedule for Fourth JSC meeting</li> <li>3. Training and seminar: Report and discussions for future workshops</li> <li>4. Second dialogue with Vietnamese construction industries: Schedule and agenda</li> <li>5. Project document: Check status</li> </ol>
17	February 21, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Third JSC meeting &amp; schedule for Fourth JSC meeting</li> <li>3. Second dialogue with Vietnamese construction industries: Schedule and agenda</li> <li>4. Training and seminar: Preparation for June and November / December 2017</li> <li>5. Project Interim Report: Submission</li> </ol>
18	March 15, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Third JSC meeting &amp; schedule for Fourth JSC meeting</li> <li>3. Second dialogue with Vietnamese construction industries: Report</li> <li>4. Presentation: Guideline on Contract Management and Alteration (Output 5)</li> <li>5. CCQS Project: Schedule to completion</li> <li>6. Training and seminar: Preparation for June and November / December 2017</li> </ol>
19	April 7, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Schedule of Fourth JSC meeting</li> <li>3. Training workshops: Preparation for June and November / December 2017</li> <li>4. Work performance evaluation: Project selection</li> </ol>
20	May 5, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Fourth JSC meeting</li> <li>3. Training workshops: Preparation for June and November / December 2017</li> <li>4. Work performance evaluation: Project selection</li> </ol>
21	June 9, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Fourth JSC meeting</li> <li>3. Training workshops: Preparation for June and November / December 2017</li> <li>4. Work performance evaluation: Project selection</li> </ol>
22	July 14, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Fourth JSC meeting &amp; schedule for Fifth JSC meeting</li> <li>3. Training workshops: Report of workshops in June 2017 and preparation for November / December 2017</li> <li>4. Work performance evaluation: Report of third trial</li> <li>5. Future trainings: Explanation of future training program on GLCM</li> </ol>
23	August 4, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Minutes of Fourth JSC meeting &amp; schedule for Fifth JSC meeting</li> <li>3. Training workshops: Preparation for November / December 2017</li> <li>4. Training in Japan: Schedule change (November 2017 to early 2018)</li> <li>5. JICA mission on safety management: Arrangement of meeting with MOC</li> </ol>
24	September 8, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Schedule for Fifth JSC meeting</li> <li>3. Presentation: GLQI (Output 1)</li> <li>4. Future trainings in 2018: Issuance of correspondence to MOC leader</li> <li>5. Training workshops: Preparation for November / December 2017</li> <li>6. Training in Japan: Schedule arrangement (February to March 2018)</li> </ol>

Date	Item for Discussions
25 October 5, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. JSC meeting: Schedule for Fifth JSC meeting</li> <li>3. Presentation: SPSEM &amp; GLSEI (Output 2) and GLCE (Output 3)</li> <li>4. Future trainings in 2018: Check status of plan for future trainings in 2018</li> <li>5. Training workshops: Preparation for November / December 2017</li> <li>6. Training in Japan: Schedule (February 21 to March 3, 2018) &amp; program</li> </ol>
26 November 3, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Schedule of CCQS Project to Completion: Confirmation</li> <li>3. JSC meeting: Minutes of Fifth JSC meeting</li> <li>4. Future trainings in 2018: Check status of plan for future trainings in 2018</li> <li>5. Training workshops: Preparation for November / December 2017</li> <li>6. Training in Japan: Schedule (February 21 to March 3, 2018) &amp; program</li> </ol>
27 December 8, 2017	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Schedule of CCQS Project to Completion: Confirmation</li> <li>3. Special meeting for draft PCR: Schedule on January 24, 2018</li> <li>4. JSC meeting: Minutes of Fifth JSC meeting</li> <li>5. Joint Review of the Project: Explanation &amp; schedule for interviews to C/Ps</li> <li>6. Training workshops: Report of workshops in November / December 2017</li> <li>7. Training in Japan: Schedule (February 21 to March 3, 2018) &amp; participants list</li> </ol>
28 January 10, 2018	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Special meeting for draft PCR: Schedule &amp; agenda</li> <li>3. JSC meeting: Minutes of Fifth JSC meeting</li> <li>4. Training in Japan: Schedule, participants list and program</li> </ol>
29 February 1, 2018	<ol style="list-style-type: none"> <li>1. Status of CPMU</li> <li>2. Special meeting for draft PCR: Minutes of Special meeting</li> <li>3. Meeting for delivery of PCR and Output Documents: Schedule</li> <li>4. Training in Japan: Final confirmation of schedule, participants and program</li> </ol>

#### 4.2.5 Output Documents and Project Completion Report

##### (1) Output Documents

During the period of CCQS Project, the following documents were complete and submitted to MOC shown below.

**Table 4-7 Submission of Output Documents**

	Documents	Submission	Remarks
1	Standard Plan for Quality Management (SPQM) Revised SPQM	June 2016 August 2017	
2	Guideline for Quality Supervision and Inspection (GLQI)	October 2017	
3-1	Standard Plan for Safety Management (SPSM)	June 2016	
3-2	Standard Plan for Safety and Environment Management (SPSEM)	October 2017	3-1 included
4	Guideline for Safety and Environmental Inspection (GLSEI) Revised GLSEI	October 2017 December 2017	
5	Guideline on Cost Estimation for Indirect Construction Contractor Works (GLCE- 1)	July 2016	
6	Guideline on Cost Estimation for Construction Contractor Works (GLCE) Revised GLCE	October 2017 January 2018	5 included
7	Training Program and Materials for GLCE	January 2018	
8	Evaluation Method on Engineering Capacity of Construction Contractors	October 2016	8 & 9 combined
9	Grading System of Construction Contractors	October 2016	
10	Selection Mechanism of Construction Contractors	April 2017	
11	Improvement of Regulation on Qualification for PMUs	August 2016	
12	Guideline on Contract Management and Contract Alteration (GLCM) Revised GLCM	March 2017 December 2017	
13	Training Program and Materials for GLCM	December 2017	

Source: Project team

(2) Project Completion Report

The Project Completion Report (PCR) was compiled with the following contents, based on the requirements in the contract.

**Table 4-8 Contents of Project Completion Report**

Chapter	Title	Contents
Chapter 1	Project Outline	PDM, Project structure & Project member etc.
Chapter 2	Project Flow and Sequences	Project flow etc.
Chapter 3	Status and Major Issues of Construction Investment Project	
Chapter 4	Activities for Overall Project Management	Monitoring, JSC, PCU & PCR etc.
Chapter 5	Case Study Projects	Six projects studied
Chapter 6	Enhancement of Quality Management (Output 1)	Activities in Output 1
Chapter 7	Enhancement of Safety and Environment Management (Output 2)	Activities in Output 2
Chapter 8	Enhancement of Cost Estimation (Output 3)	Activities in Output 3
Chapter 9	Enhancement of Evaluation of Engineering Capacity of Construction Contractors and Qualification of PMUs (Output 4)	Activities in Output 4
Chapter 10	Enhancement of Contract Management (Output 5)	Activities in Output 5
Chapter 11	Dialogues and Trainings	
Chapter 12	Public Relations	
Chapter 13	Training in Japan	Three times
Chapter 14	Result of Joint Review	DAC five criteria
Chapter 15	Recommendations and Lessons Learned	
Appendix 1	Project Design Matrix (version 1 to 6)	
Appendix 2	Project Monitoring Sheet (version 1 to 5)	
Appendix 3	Minutes of Meetings (Kick-off and JSC meetings)	

Source: Project team

PCR was drafted and discussed in the Special meeting participated by most JSC member in January 2018 in Viet Nam and in the meeting participated by staff in JICA Headquarters in February 2018 in Japan. Comments provided in both meetings and delivered later were reviewed by the Project team and incorporated into the PCR as necessary.

Final version of PCR was sent to the participants in both meeting and relevant personnel for confirmation and the Project team finally compiled and submitted the Project Completion Document together with the Output Documents listed in Table 4-7 in April 2018 in accordance with the contract.

### 4.3 Recommendations and Lessons Learned

All activities for overall project management were carried out mostly in accordance with the plans, including JSC and PCU meetings. There are two things observed during CCQS Project, which are (1) information exchanges among C/Ps (SACQI, SACE and CAMA) in MOC took longer time than expected, and (2) Academy of Managers for Construction and Cities (AMC) is an organization in MOC implementing various trainings in regard to construction did not participate the activities in CPMUs at the first place in CCQS Project.

These are the points to improve for future and similar projects, when planning projects.

## Chapter 5 Case Study Projects

### 5.1 Selection of Projects

Several construction projects were selected for case study to grasp the procedure and actual implementation of construction management in Viet Nam. Case study projects targeted are the infrastructure projects such as construction of roads and bridges as public investment projects. Building project such as public buildings, schools and hospitals may be considered to include as a targeted project.

The criteria for selecting the case study projects are as follows:

- ♦ Financial resources are from state budget / public project of Viet Nam, JICA loan and other donor project;
- ♦ General infrastructure projects such as construction of roads, bridges, dam and power plant etc.;
- ♦ Projects including common works in infrastructure projects such as earthworks, concrete works, pavement works and temporary works (scaffoldings and supports);
- ♦ Projects under construction or recently completed; and
- ♦ Projects located in or near Hanoi.

Selection was carried out through discussions with Chief advisor, counterparts (C/Ps) and JICA experts, and then finally decided in the meeting between MOC Project Preparation Members (at the time, Project Coordination Unit (PCU) was not organized yet) and JICA team.

The case study projects selected were presented in Table 5-1. It is to note that three projects were originally considered to select and actually six projects were selected as below.

**Table 5-1 Summary of Case Study Projects**

	<b>Projects</b>	<b>Category*<sup>1</sup></b>	<b>Grade*<sup>1</sup></b>	<b>Location</b>
<b>JICA Loan Project</b>				
1	Second Transport Sector Loan for National Road Network Improvement Project - Tham Bridge, Thanh Hoa	Transport works (Road & Bridge)	II	Nga Son district and Hau Loc District, Thanh Hoa Province
2	Lach Huyen Port Infrastructure Construction Project (Road and Bridge Portion)	Transport works (Road & Bridge)	I	Cat Hai District, Hai Phong City
<b>State Budget / Public Project</b>				
3	New Office of Cau Giay People's Court	Building works	II	Dich Vong ward, Cau Giay district, Hanoi City
4	Ha Long – Hai Phong Expressway	Transport works (Road & Bridge)	I	Dai Yen ward, Ha Long city, Quang Ninh Province
5	Lai Chau Hydropower Plant Project	Industrial works	Special	Nam Hang commune, Murong Te District, Lai Chau Province
6	Song Hau Thermal Power Plant Project	Industrial works	I	Chau Thanh district, Hau Giang Province

Source: Project team

Note: 1) Categories and grades of construction works: Refer to Circular 03/2016/TT-BXD, Decree 46/2015/ND-CP and the Law on Construction (Article 5).

## 5.2 Site Visits

### 5.2.1 Site Visit Plan

#### (1) Objectives

In order to understand the procedure and actual implementation of construction management, the site visit was conducted for the selected case study projects. The objectives of site visits are:

- ♦ To explain the outline of the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project);
- ♦ To explain documents required to carry out the survey on quality and safety management, cost estimation system and contract management;
- ♦ To conduct the site reconnaissance to observe the actual implementation of these management plans; and,
- ♦ To discuss the issues on construction management with the project stakeholders such as the project owner (PO), the project management unit (PMU), the supervision consultants and the contractors.

#### (2) Agenda of Site Visit

Site visits were conducted according to the agenda shown in Table 5-2. Both the Ministry of Construction (MOC) C/Ps from International Cooperation Department (ICD), Construction Economics Department (CED, CED became the State Authority for Construction Economics in July 2017: SACE), State Authority of Construction Quality Inspection (SACQI) and Construction Activity Management Authority (CAMA) together with Chief advisor and JICA experts participated in the site visits.

In order to grasp the actual implementation and practices of construction management in construction projects in Viet Nam, documents related to each output such as the contract, specifications and drawings, quality and safety management plans, bill of quantity and cost estimate information, etc. were requested to be provided.

Component Project Management Unit (CPMU) members also discussed the issues on construction management with the Project Management Unit (PMU), the supervision consultants and the contractors based on the questionnaire and results of the site reconnaissance.

**Table 5-2 Agenda of Site Visit**

Plan	Purpose	To be visited	Agenda
First Visit	Explanation, Document Collection and Site Visit	PMU Contractor Supervision consultant	1) Explanation of CCQS Project 2) Explanation of documents required 3) Site reconnaissance 4) Question and Answer
Second Visit (if needed)	Interview and Site Visit	PMU Contractor Supervision consultant	1) Interview 2) Site reconnaissance

Source: Project team

## 5.2.2 Result of Site Visits

### (1) Schedule of Site Visits

The information of the site visits was shown in Table 5-3.

**Table 5-3 Schedule of Site Visit**

	<b>Projects</b>	<b>Date</b>	<b>Attendance</b>
<b>JICA Loan Project</b>			
1	Second Transport Sector Loan for National Road Network Improvement Project – Tham Bridge, Thanh Hoa	July 14, 2015	PMU (PMU 6), the Engineer (Katahira & Engineers International), the contractor (Thang Long JSC.), MOC (ICD, CED, CAMA), Chief advisor and JICA experts
2	Lach Huyen Port Infrastructure Construction Project (Road and Bridge Portion)	June 25, 2015 July 1, 2015	PMU (PMU 2), the Engineer (Japan Bridge & Structure institute, Inc.), the contractor (Sumitomo Mitsui Construction Co., Ltd.), MOC (ICD, CED, SACQI, CAMA), Chief advisor and JICA experts
<b>State Budget / Public Project</b>			
3	New Office of Cau Giay People's Court	September 23, 2015	PMU (Hanoi People's Court), the supervision consultant (Vietnam City Consultant Joint Stock Company), the contractor (Tropical Architecture Construction), MOC (ICD, CED, SACQI, CAMA), Chief advisor and JICA experts
4	Ha Long – Hai Phong Expressway	September 25, 2015	PMU (Department of Transport, Quang Ninh Province), the supervision consultant (The Transport Engineering Design Inc.), the contractor (Cienco 4), MOC (ICD, CED, SACQI, CAMA), Chief advisor and JICA experts
5	Lai Chau Hydropower Plant Project	December 8, 2015 December 10, 2015	PMU (Son La Hydropower Project, EVN), the contractor (Son Da), MOC (ICD, CED, SACQI, CAMA), Representative from Japan Embassy, Chief advisor and JICA experts
6	Song Hau Thermal Power Plant Project	December 9, 2016	PMU (Song Hau 1 Power Project, Petro VN) EPC contractor (LILAMA, TEPCO) MOC (ICD, CED, SACQI, CAMA) Chief advisor and JICA experts

Source: Project team

### (2) Collected Documents

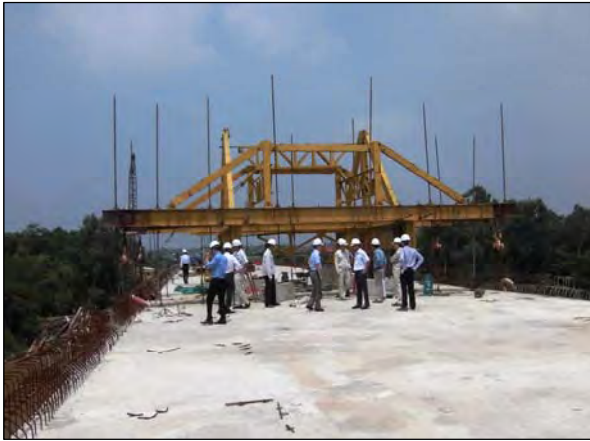
The Project team collected the documents of two JICA loan projects and four State budget / Public projects so far. The documents collected are kept in the office of the Project team (the lists of documents collected of the case study projects are shown in Table 5-5 to 5-10).

The Project team reviewed the documents obtained. The findings from the document reviews are discussed in detail in subsequent chapters for each output.

### (3) Site Reconnaissance

The Project team conducted site reconnaissance guided by the PMUs and the contractors. CPMU members for each output looked at the construction sites to help themselves to figure out the issues on actual practices of construction management.





(a) Tham Bridge



(b) Lach Huyen Port (Road and Bridge)



(c) Cau Giay People's Court



(d) Ha Long – Hai Phong Expressway



(e) Lai Chau Hydropower Plant Project



(f) Song Hau Thermal Power Plant Project

Source: Project team

**Figure 5-1 Pictures of Site Reconnaissance of Case Study**

#### (4) Discussion

The Project team discussed the issues on construction management with the PMU, the Engineer, the supervision consultants and the contractors based on the questionnaires and findings of site reconnaissance.

The outline of the questionnaires is shown in Table 5-4.



**Table 5-4 Outline of Questionnaire of Case Study Projects**

<b>Output 1</b>	
1	Legal basis of quality management and method statements
2	Method statement on quality management (type of works, inspection and records)
3	Quality defect (measures and treatment methods, reporting and revision of statement)
4	Personnel of quality management at the site (organization, qualification and capacity)
5	Issues on quality management (e.g., cost for quality management)
<b>Output 2</b>	
1	Legal basis of safety management plan and method statements
2	Safety management activities and reporting system
3	Issues on safety management plan (cost, schedule, safety officers, workers awareness)
4	Community relations at the construction site
<b>Output 3</b>	
1	Indirect cost of quality and safety management, temporary works and support works
2	Use of standard estimation system issued by the government
3	Difference between amount of money in contract and actual expenses in indirect cost
4	Sufficiency of the norm of indirect cost of Vietnamese regulations
<b>Output 4</b>	
1	PMU's role, organization, evaluation mechanism and required skills
2	Contractor/consultant registration system
3	Evaluation of performance of the projects
<b>Output 5</b>	
1	Contract management, legal basis and application of FIDIC
2	Defect liability period in the contract
3	Construction insurance in the contract

Source: Project team

The results of discussion were compiled in detail in later chapters for each output, except some analysis made for indirect cost in construction contractor works described hereafter.

Breakdowns of contract amounts in local contractors in case study projects were received. When reviewed them, it was confirmed that the amounts for indirect construction contractor works were computed, following the current regulations in Viet Nam.

As details are stipulated in Chapter 8, cost estimation for indirect construction contractor works in the current regulations in Viet Nam is observed insufficient. This issue was studied in Output 3 in Chapter 8 and the guideline on the cost estimation for indirect construction contractor works was formulated and submitted to MOC in January 2018. In addition, domestic project for improvement of construction norm and price system was determined to implement with the results of CCQS Project. Hence, cost estimation system will be expected to improve near future.

Documents received from case study projects are listed in the tables below.

**Table 5-5 List of Documents from Case Study Project (1)**  
(Second Transport Sector Loan for National Road Network Improvement Project: Tham Bridge)

No.	Documents	Language	Remarks
1	Bidding Documents	EN & VN	
2	General conditions, specific conditions, technical instructions, technical design drawings (included in bidding documents)	EN & VN	
3	Contract agreement	EN & VN	
4	Contract appendix	EN & VN	
5	Bids: Construction method explanation and price unit analysis	EN & VN	
6	Working progress (included in bids)	Vietnamese	
7	Construction methods: abutments, piers, bore pile, car castings, superstructures, K0 block, car castings trial outlines etc...	EN & VN or bilingual	
8	Monthly report	Vietnamese	Original
9	Some related documents (included in contract appendix)	Vietnamese	
10	Test results: compacted concrete sample, quality of bore pile, density of sand, gravel and cement	Vietnamese	Copy
11	Collection of laboratory test results	Vietnamese	Copy
12	Environment sanitation plan	Bilingual	
13	Traffic ensuring plan	Bilingual	
14	Safety plan	Bilingual	
15	Quality control plan	Bilingual	
16	Labor safety training certificate	Bilingual	Copy
17	Document of human resource	Vietnamese	Copy
18	Car registration forms	Vietnamese	

EN: English, VN: Vietnamese  
Source: Project team

**Table 5-6 List of Documents from Case Study Project (2)**  
(Lach Huyen Port Infrastructure Construction Project)

No.	Documents	Language	Remarks
1	Contract Vol I	EN & VN	
2	Contract Vol II	EN & VN	including Specification on Quality and Safety Management
3	Monthly Progress Report of July 2015	EN	
4	Highway Design Drawings	Bilingual	
5	Temporal Facilities Drawings	Bilingual	
6	Construction Method Drawings	Bilingual	
7	Bridge & Approach Drawings (CAD files)	Bilingual	
8	Final Cost Estimate and BOQ, related documents	VN & EN	
9	Quotation and Related Documents	EN & JP	

EN: English, VN: Vietnamese, JP: Japanese  
Source: Project team

**Table 5-7 List of Documents from Case Study Project (3)**  
(Construction Project of New Office of Cau Giay People's Court)

No.	Documents	Language	Remarks
1	Bidding Documents (Package: Supervision Consultant)	Vietnamese	
2	Bidding Documents (Package: Construction)	Vietnamese	
3	Safety management plan	Vietnamese	
4	Technical specification: Design drawing	Vietnamese	
5	Construction contract	Vietnamese	
6	Construction method	Vietnamese	
7	Design estimation documents	Vietnamese	
8	Design drawing	Vietnamese	Some pages selected
9	Consultant contract (Ref: Examination of construction investment project)	Vietnamese	
10	Approval decision of tender results (Construction package)	Vietnamese	
11	Consultant contract (Ref: Consultant of making working drawings and total cost estimation)	Vietnamese	
12	Consultant contract for construction investment project formulation	Vietnamese	
13	Appendix of consultant contract	Vietnamese	
14	Decision on appointment of consultant contractor	Vietnamese	
15	Decision on appointment of measuring and project allocation unit	Vietnamese	
16	Consultant contract (for conducting bidding documents and evaluating tenders)	Vietnamese	
17	Business contract No. 2404/2015/HD-XD	Vietnamese	
18	Decision on establishing project management unit	Vietnamese	
19	Supervision consultant contract	Vietnamese	
20	Minutes of contract negotiation (Package: Supervision consultant of construction work and equipment installation)	Vietnamese	
21	Approval decision on contractor selection results (Package: Supervision consultant of construction work and equipment installation)	Vietnamese	
22	Acceptance minutes of construction consultant contract (Package: Consultant of making working drawings and total cost estimation)	Vietnamese	
23	Approval decision of tender result (Package: Consultant of making working drawings and total cost estimation)	Vietnamese	
24	Decision on appointment of examination contractors (Examination of bidding documents and tender results)	Vietnamese	
25	Minutes of contract negotiation (Package: Examination of bidding documents and tender results for design and construction consultant)	Vietnamese	
26	Contract liquidation acceptance minutes	Vietnamese	
27	Business contract of geological survey	Vietnamese	
28	Quality management plan	Vietnamese	

Source: Project team

**Table 5-8 List of Documents from Case Study Project (4)**  
(Construction Project of Ha Long – Hai Phong Expressway)

No.	Documents	Language	Remarks
1	Contract Agreement	Vietnamese	Package XL4
2	Minutes of Contract Negotiation	Vietnamese	Package XL4
3	PO's Cost Estimation	Vietnamese	Package XL4
4	Design Drawings	Vietnamese	Package XL4
5	Specifications	Vietnamese	Package XL4
6	PMU Establishment Decision	Vietnamese	Package XL4
7	Organization chart of Supervision Consultant	Vietnamese	Package XL4
8	Work plan of Supervision Consultant	Vietnamese	Package XL4
9	Organization chart of Safety Management and Quality Management of Contractor	Vietnamese	Package XL4

Source: Project team

**Table 5-9 List of Documents from Case Study Project (5)**  
(Lai Chau Hydropower Plant Project)

No.	Documents	Language	Remarks
1	Request for Proposal: Volume I. Instruction To Bidder	Vietnamese	
	Chapter I Requirements for appointing	Vietnamese	
	Chapter II Data sheet	Vietnamese	
	Chapter III Evaluation criteria	Vietnamese	
	Chapter VI Forms	Vietnamese	
2	Request for Proposal: Volume II. Requirements of Works	Vietnamese	
	Chapter V Introduction on project, package	Vietnamese	
	Chapter VI BOQ	Vietnamese	
	Chapter VII Requirements on schedule	Vietnamese	
	Chapter VIII Specifications	Vietnamese	
3	Proposal	Vietnamese	
	Part I: Site management organization	Vietnamese	
	Part II: Construction methods	Vietnamese	
	Part III: Construction schedule	Vietnamese	
	Part IV: Quality management	Vietnamese	
	Part V: Safety and environment	Vietnamese	
4	Contract Documents	Vietnamese	
	Contract agreement	Vietnamese	
	General conditions	Vietnamese	
	Particular conditions	Vietnamese	

Source: Project team

**Table 5-10 List of Documents from Case Study Project (6)**  
(Song Hau Thermal Power Plant Project)

No.	Title	Language	Remarks
1. Document at Tender			
1-1	Bidding Plan at Tender (11 pages)	VN	(11 pages)
2. Contract Documents			
2-1	Conditions of Contract between PO and the Contractor	VN	FIDIC base (128 pages)
2-2	Contract between PO and the Consultant	EN	(81 pages)
3. Management Documents			
3-1	Organization chart for PO/PMU & Role of responsibility of PMU, Establish Decision of PMU	VN	(5 pages)
3-2	Organization chart for the Consultant	EN	Pre EPC Award & PM / SV (2 pages)
3-3	Organization chart for the contractor	EN	(1 page)
4. Technical Documents (delivered with soft copies)			
4-1	Quality Management Plan	EN	1 file (59 pages)
4-2	Safety Management Plan	EN	19 files (over 300 pages)
4-3	Environment Management Plan	VN/EN	7 files (78 pages)
4-4	Construction Schedule	EN	1 file (139 pages)

EN: English, VN: Vietnamese

Source: Project team

### 5.3 Recommendations and Lessons Learned

Site visits for case study projects were completed successfully as all stakeholders made every effort for the Project team. The followings are the achievements in this activity.

- ♦ Six projects (four are state budget or public projects and two are loan projects) were visited, though originally three were planned.
- ♦ There were varieties of types (building, transport, industry: power plant), including the engineering, procurement and construction (EPC) contract.
- ♦ Required documents were collected mostly except those with confidential, which were enough for the Project team to study and review current practices in quality and safety management, cost estimation, function of PMUs and contract management.

At the same time, the following issues are identified.

- ♦ It took long time to select the projects under state or public budget for site visit, as MOC does not directly manage construction projects.
- ♦ In site visits, there were many items (quality & safety management, cost estimation, function of PMUs, contract management) to discuss. Therefore, many staff needed to involve for long time.

From the above experiences, when similar kinds of activities (site visits) are required, steps mentioned below may be taken.

- a) To make purpose for site visits clear and focus on items to search and discuss
- b) To identify required types (building, transport etc.) of construction works to achieve the purpose
- c) To approach responsible organizations and request them to select suitable projects for site visits



## Chapter 6 Enhancement of Quality Management (Output 1)

### 6.1 Outline of Output 1

**Policy** Capacity for identifying necessary items concerning international standard of quality management of construction works is enhanced.

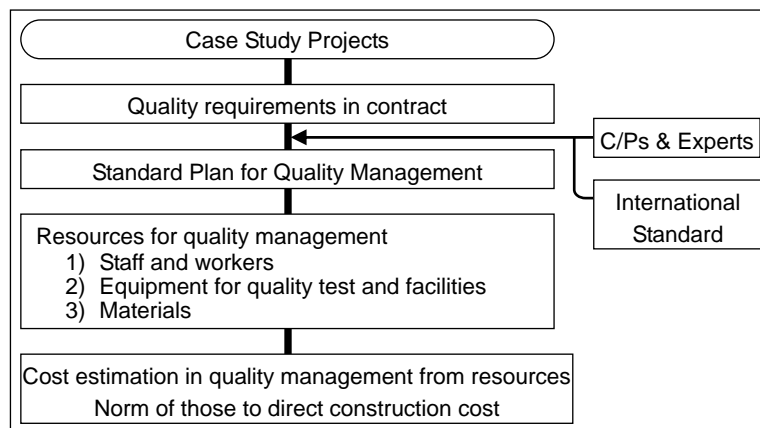
In Viet Nam, quality management in construction projects is not taken care properly and subsequently construction quality is sometimes indicated insufficient. This is due to lack of knowledge and experiences on construction quality for engineers both from the employer and contractor side, and the cost estimation in construction projects does not correspond to the requirements on quality stipulated in specifications and regulations.

Construction quality in Japan is ensured with the construction quality plan prepared in advance based on the quality requirements stated in specifications (quality requirements are reflected to the cost estimation) and the regular inspections in quality on site.

In the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project), several case study projects are selected to find out the issues on quality management practice and cost in Viet Nam. Base on the analysis, counterparts (C/Ps) together with Japan International Cooperation Agency (JICA) experts prepare “Standard Plan for Quality Management (SPQM)” for the contractors, when applying quality requirements in international standard, for which the construction quality manual compiled in the Project for Capacity Enhancement in Construction Quality Assurance (Quality TCP) financed by JICA in 2010 to 2013 is referred.

Then cost for quality management is estimated, satisfying the SPQM. The result of cost estimation is used for improvement of cost estimation system in Viet Nam under Output 3.

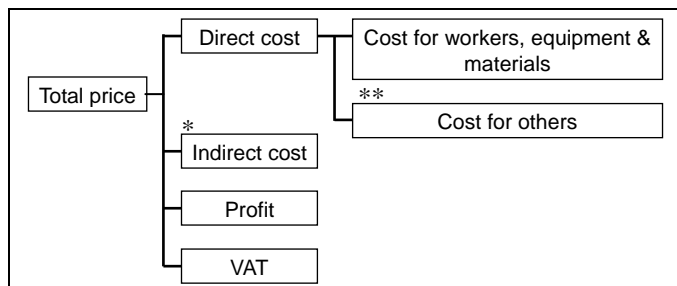
Study approach of cost estimation on quality management mentioned above is shown below.



Source: Project team

**Figure 6-1 Study Approach of Cost Estimation on Quality Management**

Construction cost structure in Viet Nam is shown right in accordance with Circular 4/2010/TT-BXD and costs for quality management are included in indirect cost indicated asterisk (\*). Cost for others in direct cost indicated asterisks (\*\*) includes material tests. Details in the cost structure components are shown below.



Source: Project team

**Figure 6-2 Construction Cost Structure in Viet Nam**

Direct Cost	Cost for workers, equipment and materials as well as others are included. Others consist of costs of material & equipment shifting, costs of workers safety & environments and costs for material tests.
Indirect Cost	Costs of site management, temporary facilities, and quality management as well as costs of head office are included.

According to the construction cost structure in Japan, costs for quality management are part of temporary site facility cost and site management cost. Results of cost estimation and rate to direct costs built up from the above flow (Figure 6-1) are compared with those stipulated in standard cost estimation in Viet Nam and Japan, and then analyzed. The result of analysis is compiled in cost estimation guideline for indirect construction contractor works to be carried out in Output 3.

As stated in Section 1.2 in Chapter 1, C/Ps requested additional study in the Second Joint Steering Committee (JSC) meeting in April 2016, which was to formulate Guideline for Quality Supervision and Inspection (GLQI) for State Authorities (SAs) and Project Owners (POs) / Project Management Units (PMUs) in addition to the SPQM mentioned above. After due consideration, GLQI was included in the output documents of Output 1 in Third JSC meeting in October 2016.

Through these activities, State Authority of Construction Quality Inspection (SACQI) capacity for identifying necessary items concerning international standard of quality management of construction works is enhanced. The SPQM and GLQI prepared through the case study projects and study on current regulations in Viet Nam are reviewed and revised as required, including the cost estimation on quality management.

As described in the future plan of Table 6-6 in Section 6.3, SPQM and GLQI will be disseminated through trainings and applied on trial, and then incorporated in legal regulations.

## 6.2 Activities

The Project team held number of the Component Project Management Unit (CPMU) meetings, and prepared and compiled the SPQM and GLQI through review of current practices of quality management in selected case study projects as well as review of regulations in regard to quality management in construction works.

After confirming in CPMU meetings, the SPQM and GLQI were presented and accepted in the Project Coordination Unit (PCU) meetings and the JSC meetings. Then both were submitted to the Ministry of Construction (MOC) with the covering letters.

### 6.2.1 Review of Current Practices of Quality Management

The Project team investigated the current practice for quality control in Viet Nam under JICA loan projects and state budget projects which were selected as the case studies.

The projects investigated are as follows.

#### 【JICA Loan Projects】

- 1) Lach Huyen Port Infrastructure Construction Project (Transport- Road & Bridge)
- 2) Second Transport Sector Loan for National Road Network Improvement Project (B3-14 Tham Bridge) (Transport- Road & Bridge)

#### 【State Budget Projects】

- 3) Construction Project for the New Office of Cau Giay People's Court (Building)
- 4) Ha Long – Hai Phong Expressway Construction Project (Transport- Road & Bridge)
- 5) Lai Chau Hydropower Plant Project (Industry Infrastructure)
- 6) Song Hau Thermal Power Plant Project (Industry Infrastructure)

Judging whether the quality control of case study projects is conducted appropriately or not, JICA experts and C/Ps confirmed the following points.



<b>&lt; Basic Points for Targeted Projects of Case Study &gt;</b>
<ul style="list-style-type: none"> <li>• Financial resources from state budget of Viet Nam, JICA loan and other donors</li> <li>• General infrastructure projects such as roads, bridges etc.</li> <li>• Projects including common works in infrastructure projects such as earthworks, concrete works, pavement works, temporary works (scaffoldings and supports) and so on</li> </ul>

C/Ps and JICA experts jointly compiled the quality control issues of construction works in Viet Nam based on the document reviews and the construction site visits of case study projects. The Project team proposed the improvement plan for the major quality control issues, and discussed in CPMU meetings. Then, the team proceeded to formulation of SPQM.

<b>Major Issues from Site Visits &amp; Document Reviews</b>	<b>Improvement Plan</b>
<ul style="list-style-type: none"> <li>• There were no documents of countermeasures for the quality faults found, the prevention step flow and work records in case study projects.</li> </ul>	<ul style="list-style-type: none"> <li>• The Project team proposed record keeping of the countermeasures for quality faults, because these are very important for the future maintenance and similar construction works in future for lesson learned.</li> </ul>
<ul style="list-style-type: none"> <li>• There was no specialized department in charge of quality control in construction site organization of some case study projects.</li> <li>• It is said that proper quality control is not conducted on site, because inexperienced engineers are assigned at some of case study projects.</li> </ul>	<ul style="list-style-type: none"> <li>• Specialized department having responsibility and authority for quality control in construction site organization of the contractor can check quality control in detail and improve the quality. The Project team proposed adopting this system.</li> <li>• It is concern that there is high risk to result in low quality infrastructure due to inexperienced quality control staff. The Project team proposed training of engineers and the selecting criteria for quality control staff.</li> </ul>

At CPMU meetings, JICA experts and C/Ps recognized the importance of solving the above issues, and decided to include the improvement plan in the SPQM.

Since additional activity 1-4 (GLQI) in the Project Design Matrix (PDM) shown in Table 1-1 of Chapter 1 was confirmed in October 2016, several CPMU meetings were held and discussed between C/Ps and JICA team by referring review results on quality management in case study projects again. The Project team agreed to incorporate importance of record keepings in case of quality faults in the GLQI, too.

## 6.2.2 Standard Plan for Quality Management

### (1) First Submission of SPQM

Upon C/Ps request, the Project team discussed the quality control standard and control method in Viet Nam in future by referring the quality control method and construction quality control plan in Japan. Then based on the document review and site visits of case study projects, the Project team discussed the countermeasures of quality control issues, and deliberated the concept of SPQM. Following the discussions for the concept of SPQM with C/Ps, the Project team decided that the content of SPQM shall be practical because the SPQM is used widely in Viet Nam from now on, in order to construct the facilities with sufficient quality. Also based on the discussions about SPQM outline, the Project team decided that the following construction works were selected in view of infrastructure size and importance with tasks in Viet Nam.

- ◆ Road Earthwork
- ◆ Concrete Work
- ◆ Steel Structure Work
- ◆ Pavement Work
- ◆ Clay Brick, Concrete Block and Autoclaved Lightweight Aerated Concrete (ALC) Panel Work.

As majority of construction packages includes the selected construction works such as earthwork and concrete work etc., the Project team considers that the construction contractors are able to prepare quality management plan fitting to their scope of works, by referring the SPQM.

Based on the discussion between C/Ps and JICA experts, the main topics of SPQM are as follows.

Classification	Content in SPQM
General Matters	<ul style="list-style-type: none"> <li>• Following the discussions with C/Ps about applying standards to the SPQM, the Project team decided basically to apply to Viet Nam Standard (TCVN). In the case not to apply TCVN due to inadequacy for the works, the Project team recommended to apply correspondingly the international standards as AASHTO, ASTM, Euro Code and so on. If not, the Project team recommended to apply the other advanced country standard.</li> </ul>
	<ul style="list-style-type: none"> <li>• The Project team stipulated clear construction management organization chart to be included in the SPQM, focusing on quality management structure and roles &amp; responsibilities on each division and assigned staff.</li> </ul>
	<ul style="list-style-type: none"> <li>• The Project team stipulated the details systematically and comprehensively in the SPQM, such as material rules, transportation, receiving inspection, management inspection on construction process, structure inspection and so on, in order to secure the traceability of quality control.</li> </ul>
Road Earthwork	<ul style="list-style-type: none"> <li>• The Project team stipulated the method and confirmation points of trial embankment in the SPQM because it is very important to control the quality for the earthwork.</li> </ul>
	<ul style="list-style-type: none"> <li>• C/Ps requested to stipulate the dam earthwork and river earthwork. But the Project team concentrated the road earthworks in the SPQM at this stage, because those are less popular, compared with road earthwork.</li> </ul>
Concrete Work	<ul style="list-style-type: none"> <li>• The Project team stipulated Japanese know-how in the SPQM, such as mass concrete measures, hot weather concrete measures, gas-pressure welding &amp; mechanical joint for re-bars and so on.</li> </ul>
	<ul style="list-style-type: none"> <li>• C/Ps requested to mention PC works and vertical formworks. Then the Project team decided to stipulate PC works and vertical formworks because those are relatively popular.</li> </ul>
	<ul style="list-style-type: none"> <li>• The Project team added the air content test in concrete, because the controlling air content assures the higher quality structure at the quality control for concrete work. [Reason for air content test]</li> <li>• If reducing air content in concrete, the concrete workability decreases and happens the material breaking. On the contrary, if increasing air content, the concrete strength reduces. Then to check air content is essential to have good quality concrete.</li> </ul>
Steel Structure Work	<ul style="list-style-type: none"> <li>• C/Ps requested to mention the quality control standard and method for welding because knowing Japanese know-how, and the Project team stipulated them referring to the construction works in Japan.</li> </ul>
Pavement Work	<ul style="list-style-type: none"> <li>• The Project team stipulated the quality control method of not only surface layers but also sub-base because there are serious issues in these works in Viet Nam.</li> </ul>
Clay Brick, Concrete Block and ALC Panel Work	<ul style="list-style-type: none"> <li>• C/Ps requested to mention not only clay brick, as conventional method, but also concrete block and ALC panel, then the Project team stipulated concrete block and ALC panel, as main stream in architecture works.</li> </ul>
	<ul style="list-style-type: none"> <li>• C/Ps requested to mention concrete block and ALC panel because knowing Japanese know-how about them, and the Project team decided to stipulate them referring to the construction work in Japan.</li> </ul>
	<ul style="list-style-type: none"> <li>• C/Ps requested to record the production process for quality control of concrete block and ALC panel. But the production process is not the content of quality management plan to be submitted by the contractor, so the Project team stipulated the conduct of material inspection on delivery and the quality control inspection to the factory, when it is needed.</li> </ul>

Classification	Content in SPQM
Other	<ul style="list-style-type: none"> <li>C/Ps requested strongly to add the photo manual for construction site, because the contractor sometimes submits the other construction site photos in the case of the quality faults in Viet Nam. Then the Project team made “Standard Photo Management Plan” referring to Japanese standard of construction site photo, and attached to SPQM as an appendix.</li> </ul>

In the course of preparation of SPQM, the Project team drafted SPQM, and nominated the person in C/Ps in charge of every chapter, and then requested them to submit comments, if any. After that, the Project team discussed those comments to improve SPQM.

The contents of SPQM were discussed, revised and agreed in the CPMU meeting in April 2016.

After basic agreement in the CPMU, the draft SPQM was presented in the meeting between MOC Project Preparation Members (at the time PCU was not organized yet) and JICA team and submitted in the Second JSC meeting in April 2016.

Subsequently, the dialogues with the construction industries in Viet Nam (Vietnam Association of Construction Contractors: VACC, Vietnam Engineering Construction Association: VECAS and Overseas Construction Association of Japan Incorporation: OCAJI) were arranged and the contents of SPQM were discussed with them and comments were received from them in April 2016. In the dialogues, the following comments were given.

1. Applied technical standards
2. Insufficient ability of PMU

After reviewing all comments, the SPQM was compiled again and submitted to MOC in June 2016 with the covering letter.

## (2) Second Submission of SPQM

C/Ps sent the SPQM to outside experts for their comments at the end of 2016 and they (two experts) submitted the comments to C/Ps in April 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed and agreed in CPMU meetings. The Project team revised the SPQM as final version in accordance with the action plans and submitted it again to MOC with the covering letter in August 2017.

Contents of final version of SPQM are shown in Table 6-1.

**Table 6-1 Contents of Standard Plan for Quality Management**

Chapter	Title	Contents
Preface	Objectives	
Chapter 1	General Provision	Organizations and Roles & Responsibilities
Chapter 2	Road Earthwork	
Chapter 3	Concrete and Reinforced Concrete Work	Including PC works
Chapter 4	Steel Structure Work	
Chapter 5	Pavement Work	
Chapter 6	Clay Brick, Concrete Block and ALC Panel Work	
Appendix	Standard Photo Management Plan	

Source: Project team

The SPQM is continued to be developed. For the purpose of further improvement, any comments and suggestions provided might be incorporated to the SPQM if deemed necessary.

In any case the SPQM will be reviewed periodically, as this kind of documents shall be updated time to time.

### 6.2.3 Cost Estimation on Quality Management

#### (1) Study Approach

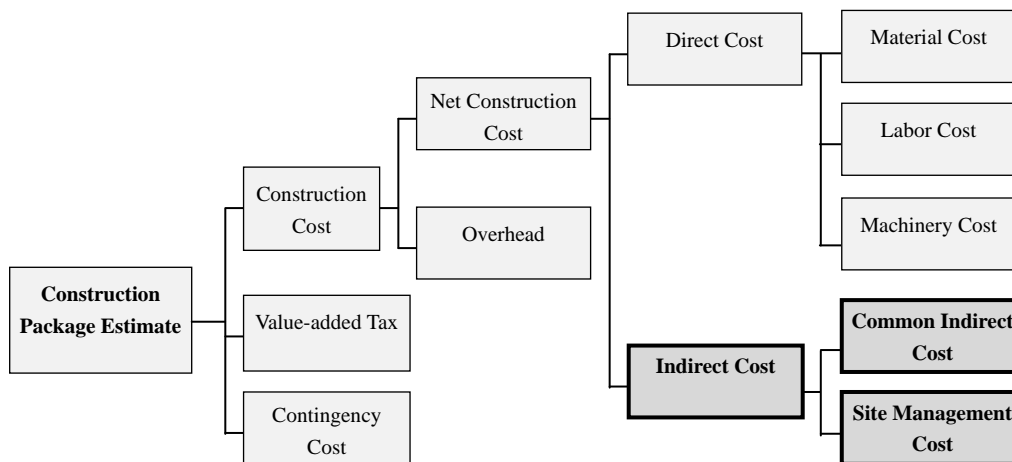
The cost for construction quality management is estimated in accordance with the requirements specified in the SPQM.

As model cases for cost estimation of quality management, case study projects “Second Transport Sector Loan for National Road Network Improvement Project (Phase 2), Package B3-14, Tham Bridge in Thanh Hoa” (hereinafter referred to as “Tham Bridge Project”) and “Construction of Expressway from Ha Long – Hai Phong” (hereinafter referred to as “Ha Long Expressway Project”) were selected, considering scale, type and components. Costs necessary for implementation of the SPQM to adopt to Tham Bridge Project and Ha Long Expressway Project were examined and estimated by the Project team.

The costs required for quality management including necessary items and number of quality management tests, facilities, equipment, personnel expenses of engineers and miscellaneous expenses were summed up. Unit costs were based on the standard prices currently used in Viet Nam. Price quotations were also collected as necessary. Finally the ratio of indirect cost was computed by comparing the cost of those indirect costs necessary for quality management with the overall construction cost.

#### (2) Cost for Quality Management

According to “the Guideline on Cost Estimation for Indirect Construction Works in Viet Nam (GLCE- 1)” of Output 3, the cost for quality management is categorized as common indirect cost and site management cost which belong to indirect cost, as shown below. The figure below is the entire cost structure of construction project package.



Source: Project team

**Figure 6-3 Cost structure of Construction Project Package**

#### ♦ Common indirect cost;

In common indirect cost, quality management cost is divided into two groups by method of estimation, which is cost of rate calculation and cost of piling up calculation. Quality management cost items for typical infrastructure construction works shall be included in both rate calculation and piling up calculation respectively in cost estimation shown in the table below.

**Table 6-2 Quality Management Cost items in Common Indirect Cost**

Quality Management Cost	
Costs of Rate Calculation	Costs of Piling Up Calculation
(1) Cost of all tests described in Standard Construction Quality Management Plan <ul style="list-style-type: none"> <li>• Soil density, CBR etc.</li> <li>• Concrete mixture test, tension</li> </ul>	(1) Cost of special quality control <ul style="list-style-type: none"> <li>• Tests besides those are regulated in quality control standard and standard construction quality management plan such as soil test etc.</li> </ul>

Quality Management Cost	
Costs of Rate Calculation	Costs of Piling Up Calculation
<ul style="list-style-type: none"> <li>• strength test of reinforcing bar etc.</li> <li>• Cost of test devices for above tests.</li> </ul>	<ul style="list-style-type: none"> <li>• In-situ tests such as geological survey, plate bearing test, boring, sounding, pile test etc.</li> <li>(2) Cost of special cases due to site conditions                             <ul style="list-style-type: none"> <li>• Setting and removing of test equipment, measurements, and data collection for soft ground research</li> <li>• Cost of works for test embankment</li> </ul> </li> </ul>

♦ Site management cost;

Site management cost is the cost for construction site management, mainly various costs of personnel (staffs and assistants at site). Therefore, this cost includes salary of quality control engineers and technicians etc. of quality management division.

(3) Comparison of Quality Management Cost

The Project team figured out the discrepancy of quality management cost in rate calculation (rate to direct cost) for two projects (Tham Bridge Project & Ha Long Expressway Project) and the case applying the SPQM to the projects. Through the comparison, discrepancy in ratio of quality management cost belongs to “cost of rate calculation” of common indirect cost is identified.

The Project team discussed the basic points of cost estimation on quality management with SACQI and State Authority for Construction Economics (SACE, upgraded from Construction Economics Department (CED) in July 2017) at CPMU meetings. Based on the points, the Project team calculated the cost of quality control following the SPQM, and the cost ratio for the indirect construction cost. With the result, the Project team explained the trial calculation to SACQI and SACE at CPMU meetings in the first half of 2016, and then submitted the set of data. After C/Ps confirmation, the Project team provided it to Output 3 document of the Guideline on Cost Estimation for Construction Works (GLCE).

At the end of 2016, some discussions were taken place again for quality management cost with C/Ps of Output 3 and differences in cost for quality management were found between C/Ps of Output 3 and the Project team. The Project team reviewed it further and revised it. The Project team eventually agreed the revised figures in CPMU meeting in July 2017, and the revised data were provided to Output 3 document of the GLCE.

## 6.2.4 Guideline for Quality Supervision and Inspection

(1) Preparation of Draft GLQI

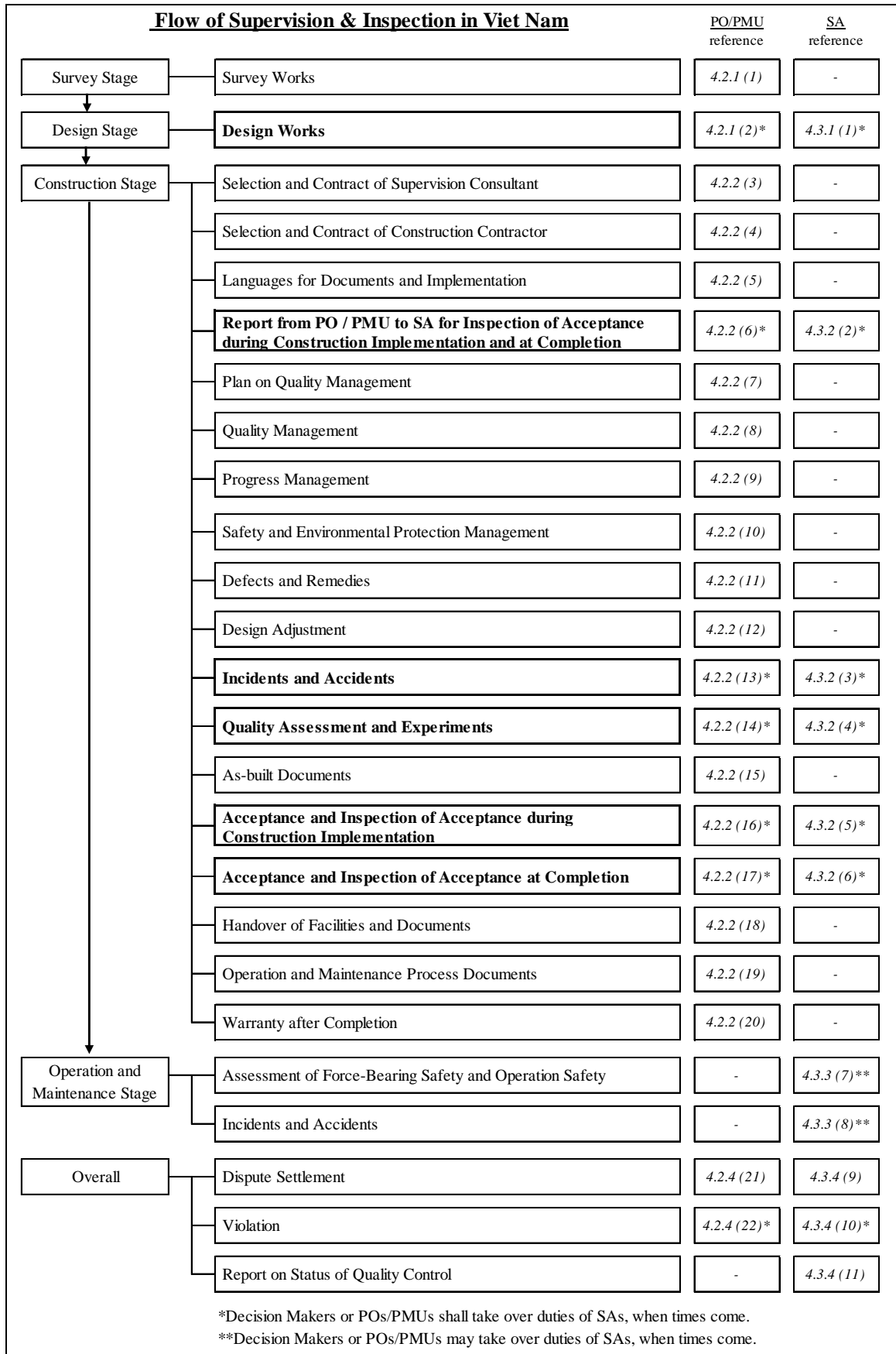
In order to formulate Guideline for Quality Supervision and Inspection (GLQI) for SAs and POs / PMUs, firstly background and procedure of GLQI formulation were summarized by taking the opinions and voices on quality supervision and inspection in construction works from stakeholders and compiled in Chapter 1 of GLQI.

Then, current regulations in regard to quality management in construction works were reviewed, such as Construction Law No. 50 / 2014 / QH13, Decree 46 / 2015 / ND-CP and Circular 26 / 2016 / TT-BXD in particular. Documents collected through case study projects were studied again together with the comments collected from various stakeholders. Based on those, current practices of supervision and inspection in construction works in Viet Nam were prepared and compiled with roles of each party (state authority, PO/PMU, project management consultant (PMC) / supervision consultant (SVC), designer, contractor, facility owner / manager etc.) together with the features in this regard in Viet Nam. These were included in Chapter 2 of GLQI.

On the other hand, flow and practices of supervisions and inspections in Japan, Singapore and other countries (United Kingdom: UK and United States of America: USA) were studied and prepared for comparison. These were described in Chapter 3 of GLQI.

Based on those practices in Viet Nam, Japan, Singapore and other countries, features and differences in supervision and inspection were identified and then improvements to fill the differences were itemized and compiled, which were included in Chapter 4 of GLQI as Important

Notes and Improvements for Supervision and Inspection for POs / PMUs and SAs separately.  
The flow of supervision and inspection in Viet Nam was compiled and shown below.



It is to note that each item in the above flow consists of important notes and the recommended improvements for future. The former can be realized anytime when the stakeholders make up their mind to improve the situation. The latter requires modification of present regulations and is classified in short term, middle term and long term. Short term means 2 to 3 year time and middle term 4 to 6 year time and long term more than 7 year time.

The Project team completed draft GLQI and discussed them in CPMU meetings in June to July 2017.

(2) Submission of GLQI

C/Ps sent the draft GLQI to outside experts for their comments and they (two experts) submitted comments to C/Ps in August 2017. The Project team presented the draft GLQI in the PCU meeting in September 2017. At the same time, the Project team reviewed the comments from the outside experts together with further comments of C/Ps and prepared action plans on those comments. The Project team revised the GLQI as final version in accordance with the action plans and presented it in the CPMU meeting in October 2017, which was then agreed with C/Ps. The Project team presented the GLQI in the Fifth JSC meeting and submitted it to MOC in October 2017 with the covering letter.

Contents for final version of GLQI are shown below.

**Table 6-3 Contents of Guideline for Quality Supervision and Inspection**

Chapter	Title	Contents
Preface	Objectives	
Chapter 1	Background and Procedure of Guideline Formulation	
Chapter 2	Current Regulations of Supervision and Inspection in Viet Nam	
	2.1 Introduction	
	2.2 Regulations	Construction Law, Decree 46 etc.
	2.3 Flow of Supervision and Inspection in Viet Nam	
	2.4 Features of Supervision and Inspection in Viet Nam	
Chapter 3	Oversea Practice of Supervision and Inspection	
	3.1 Introduction	
	3.2 Practice of Supervision and Inspection in Japan	
	3.3 Practice of Supervision and Inspection in Singapore	
	3.4 Practice of Supervision and Inspection in Others	United Kingdom & United States
	3.5 Features of Supervision and Inspection in Overseas	
Chapter 4	Important Notes and Improvements for Supervision and Inspection	
	4.1 Introduction	
	4.2 Important Notes and Improvements for POs / PMUs	22 items
	4.3 Important Notes and Improvements for SAs	11 items
	4.4 Additional Recommendations	
Appendix I	Requirements for Supervisors and Inspectors in POs / PMUs	Current and future qualifications
Appendix II	Trainings and Qualifications for Supervisions and Inspections in Japan	
Appendix III	Recommendations for Management of Construction Quality and Maintenance of Houses	

Source: Project team

The GLQI recommends that various activities (inspection of acceptance and duties for handling of incidents and accidents in particular) in quality management in construction works currently implemented by SAs shall be handed over to POs / PMUs in future with the following reasons and considerations.

- ♦ POs / PMUs shall have full power and responsibilities for construction works from survey and design stage to construction stage, including maintenance and operation stage in construction works.
- ♦ POs / PMUs shall keep transparent process and fulfill accountability in supervision and inspection.
- ♦ POs / PMUs shall have higher qualifications (Professional Engineer or Architect) for supervision and inspection in construction works. Details are stipulated in Appendix I and II.

The GLQI is continued to be developed. For the purpose of further improvement, any comments and suggestions provided might be incorporated to the GLQI if deemed necessary.

In any case the GLQI will be reviewed periodically, as this kind of documents shall be updated time to time.

### 6.2.5 Training Workshops

#### (1) Training Workshops in November and December 2016

Training workshops were arranged in the year 2016 for staff in state authorities including MOC other than C/Ps, staff in related organizations for construction projects such as POs/PMUs, staff in Vietnamese construction industry and other entities. The details of training workshop such as date, venue, participants, program etc., are described in Chapter 11.

The outline of SPQM such as purpose, concept, structure, main issues in quality management and improvement ideas was briefly presented and explained by JICA expert. On the other hand, C/Ps explained overall contents in current regulations of quality management based on Decree 46 and related circulars. After presentation, session of questions and answers were carried out. Major questions from participants and answers of the JICA experts and C/Ps regarding quality management are summarized in the table below.

**Table 6-4 Summary of Q&A on Output 1 in First Training Workshop**

Questions from Participants	Answers of JICA Experts and C/P
Is warranty time counted from the time of conditional acceptance or acceptance for completion of work because for conditional acceptance, some parts of the construction works is put into use?	In Decree 46, the conditional acceptance is conducted in case there are only few unresolved issues in terms of quality that do not threaten the bearing capacity, life cycle and functions of the work and shall ensure that the work conform with the requirement for quality. Therefore, the warranty time starts when conditional acceptance is conducted.
The Decree 46 regulates that the project owner will make decision in writing to approve the technical construction survey plan but in some projects, project owners give power to PMUs and in fact, PMUs will not issue decision in writing, but they only deliver an approval letter. Is this activity against the regulation?	For approval of the technical construction survey plan, the project owner can authorize PMU to approve and approval in writing is acceptable.
In reality, we use Viet Nam's construction law, decrees. In some cases, we use international standard such as AASHTO, JIS, etc. Could you evaluate the content of CCQS project? Do you believe that the content of CCQS project will cover all the current regulation on construction quality control? Regarding environment management, what is your expectation about quality control of Viet Nam comparing with Japan?	In some construction projects in Viet Nam, there are problems in regard to quality management. For improvement of quality control, project owner, PMU and consultants play an important role (supervision and inspection). The contractors are required to follow specifications. Regarding quality control in Viet Nam, POs, the consultants, the contractors have basic knowledge to do quality management. However, specification requirement does not really reflect to the cost estimation



Questions from Participants	Answers of JICA Experts and C/P
	in the standard cost estimation system so that sometimes the contractors are in difficult position to follow specification. The difficulty can be overcome by adjustment of cost estimation system reflecting cost for quality management, which is carried out in Output 3 in the Project. Then quality and safety management in Viet Nam could be better.
Please clarify progress of inspection of acceptance for construction works to put into use by the regulatory agencies?	At least 15 days (depending on grade of the construction works) before the day on which the pre-acceptance test is planned to be conducted, the investor shall submit an application for inspection of acceptance for work/work item for operation to a competent agency; normally, the state authority will conduct inspection before the acceptance. Details can be referred to Circular 26.
Regarding inspection of construction work acceptance of state authorities, transition article of Decree 46 states that “the acceptance for construction works that are started before the effective date of this Decree shall continue complying with the provisions of the Decree No. 15/2013/NĐ-CP dated February 06, 2013 by the Government”. So which decree should the project owner follow?	For inspection of construction work acceptance, the acceptance of the project owner will be conducted basing on the acceptance plan agreed between the contractor and the project owner. The state authority shall conduct the inspection of acceptance by the investor and issue the written approval for the acceptance result within 10 or 15 days depending on grade of works.

Source: Project team

## (2) Training Workshops in November and December 2017

Training workshops were arranged at the end of year 2017 again, similarly inviting staff in state authorities including MOC other than C/Ps, staff in related organizations for construction projects such as POs/PMUs, staff in Vietnamese construction industry and other entities. The details of training workshop such as date, venue, participants, program etc., are described in Chapter 11.

Overall quality management and the SPQM & GLQI were briefed, and then current quality supervision and inspection in Viet Nam were explained, followed by comparison of the same in Viet Nam, Japan, United Kingdom and Singapore. Recommendations for improvement in quality supervision and inspection in Viet Nam were explained in major items by JICA expert. On the other hand, C/Ps explained overall contents in current regulations of quality management together with some issues and then future plans by incorporating the SPQM and GLQI.

After presentation, session of questions and answers were carried out. Major questions from participants and answers of the JICA experts and C/Ps regarding quality management are summarized in the table below.

**Table 6-5 Summary of Q&A on Output 1 in Third Training Workshop**

Questions from Participants	Answers of JICA Experts and C/P
For warranty, in some cases, defects could not be found when handing over and within warranty period so what is responsibility of the contractor for defects which are found after warranty period?	If defects are found during warranty time, the contractors take responsibility for repair. After that time, the contractors are not responsible for defect repair. However, the contractors have to be responsible for the quality of the works they carried out even after the warranty time according to Decree 46, Article 36 Clause 6.
What is practice in Japan for demarcation of stake holders in quality supervision?	In Japan, quality supervision is standardized while in Vietnam, role of supervision depends on project owners. We recommend Viet Nam to standardize supervision contents.
Should it be stipulated in regulation about frequency for inspection of acceptance of state authorities in a year? It will be easier for localities to make cost estimation.	Previously Decree 15 regulated number of inspection of acceptance of state authorities but it is not regulated in Decree 46. According to Circular 26, in whole construction time, for works at special grade and grade 1, the number of inspection of acceptance of state authorities shall not more than 3 times and for other works, it shall not more than 2 times.

Questions from Participants	Answers of JICA Experts and C/P
<p>What is practice in Japan about responsibility of local State Authorities? How is their responsibility when accident/incident occurs? How to prevent accidents/incidents?</p>	<p>In Japan, for public works, safety is the responsibility of POs/PMUs, not State Authorities. For private works, most POs employ consultants to manage the project, for building works they hire architect. POs/PMUs take responsibility first when accident occurs. If the accident is serious, POs/PMUs establish a committee and invite experts including representative from state authorities To prevent accidents, POs/PMUs have to inspect quality and safety in daily basis.</p>
<p>After construction works complete, PO has invited an audit firm to audit the project. But after that, there are several inspection missions from different state authorities such as various inspectorates, state audit, etc. How is it regulated and is there any difference among grades of construction works?</p>	<p>Inspection works and their contents are depending on functions, duties and competences of individual state authorities (e.g. inspection on safety, quality, fire prevention, environment, audit, etc.). At present, our government has issued Resolution NQ19/2017 on main duties and measures for improving business environment and enhancing national competitiveness, therein the inter-sectors inspection is being considered for implementation from early 2018 in order to reduce the number of inspections. However, it should be considered that in case there are so many inspection contents at the same time, whether the PO and contractor can fulfill their accountability and whether the inter-sectors inspection will be effective. So, now this matter is being considered by relevant ministries.</p>
<p>How to deal with the case when the actual acceptance date of construction works is different with the acceptance date in the contract and that results in delayed handing over of works? (In case acceptance is delayed because the state authority does not approve the acceptance.)</p>	<p>Acceptance time is regulated in the contract. But the state authority inspects and finds out that the construction works do not meet requirements and consequently the acceptance date shall be delayed. In that case, it is the responsibility of the contractor and the supervision consultant firstly because they have not complied with relevant regulations in construction. In fact, if there are no longer major shortcomings on construction quality which affect the operation safety of the works; the works gain the acceptance of fire safety from the Fire authority according to Regulations on fire prevention and fighting; and the requirements according to regulations on environmental protection are completed, the state authority may still approve the acceptance.</p>
<p>JICA experts suggest that if State authorities recognize POs and PMUs capable enough, State authorities shall hand over inspection of acceptance to them. Please explain more about this.</p>	<p>This suggestion is made based on the current practices in Japan where POs and PMUs have comprehensive systems with competent staffs. In Viet Nam, it is suggested that professional PMUs be assigned to conduct trial work and step by step enhance its capacity. Moreover, state authorities may gradually level up the qualification and grading system for engineers.</p>
<p>According to Circular 26, chief supervision-consultant's signatures in as-built drawings are required. Who will take the responsibility when that person is absent? Can the deputy chief supervision-consultant sign? What is the practice about this matter in Japan?</p>	<p>Regarding this matter, you should refer to quality management system of supervision consultants which mentions clearly the responsibilities of staffs. If deputy chief supervision-consultant is assigned the authority, he can sign. For practices in Japan, for example in a company, there are 3 levels of supervisor: normal supervisor, chief supervisor and general supervisor (highest responsibility). Chief supervisor can sign in case general supervisor is absent.</p>
<p>In cases as-built drawings and design drawings are unmatched and as-built drawings and actual works differ, how to deal with these situations? Who takes the liability for as-built drawings?</p>	<p>In case of differences, firstly the as-built drawings should be updated with actual data based on the design drawings and then to re-check whether the differences are within acceptable range or not. In case of excessive differences, the design adjustment may be considered accordingly or the contractor shall be required for repair. As stipulated in Circular 26, preparation and confirmation of as-built drawings are under the responsibilities of the contractor and the supervision division of the PO.</p>

Questions from Participants	Answers of JICA Experts and C/P
Certification for chief supervisor in Japan is granted from which organization? From professional organization or state authority?	For supervision certificate, there are two kinds of certificate issued by government body for employer side and contractor side. Supervision certificate for employer side is professional engineer or registered architect certificate.
Please consider the recommendation of JICA's expert that SAs hand over duties for inspection of acceptance gradually to POs / PMUs	In order to help construction management in Vietnam to approach international level, JICA experts introduce experiences from developed countries like Japan and Singapore. In those countries, responsibilities of individuals and organizations are high and supervision and inspection system in their countries are not overlapped. Article 121 of the Law on Construction stipulates on supervision of PO. In case PO is not capable enough for supervision, they will hire supervision consultant. In fact, regardless PO is capable or not, they still hire consultant. In my opinion, Law on Construction has already stipulated responsibility of PO on supervision that PO should be responsible for that supervision. In regard of recommendations of JICA's experts, MOC has prepared the roadmap to incorporate their recommendations into our regulation. Some recommendations can be implemented in short term and others will be implemented in mid or long term. In addition, if we revise a regulation, we should apply it in some projects for pilot first in order to consider its effectiveness. As shown in the roadmap, the revision of Law on Construction is going to be conducted in 2022.
In Vietnam, for design qualifications, we have many kinds of design subjects (items) like structures, M&E, architect etc. We want to know practice in Japan about design qualifications? And in one designing work there are some levels including designer, design manager and chief designer. Is there any specific requirement for each level?	In Japan, for design work, we have professional engineer and architect. There is one big difference between Vietnam and Japan which in Vietnam, qualification is divided into 8 contents including designing, surveying, planning, cost estimation, supervision etc. In Japan, professional engineer or architect can do most of works from planning to supervision because we think that engineer at the field has to know everything, planning person has to know cost estimation and at construction stage: construction person has to understand about planning stage. To achieve certificate on professional engineer or architect, we have to pass a difficult examination including interview and written test. The pass rate is very few, only less than 20%.
In Japan, in regard to quality management of input materials, is it necessary to check/test again quality of materials (cement, steel, etc.) at the site if they have been certified by the manufacturers?	Most of materials in Japan request test certificates issued by manufacturers. If some employers request real test results, the materials will be sent to laboratory to test again.
In Japan, there are two types of supervisors including supervisor for employer side and supervisor for contractor side. What are requirements for those supervision certificates? Which supervisor is responsible for reporting to PO?	There are two types of supervision qualifications in Japan, separately for public works and private works. For public works: the contractors are required to have supervision qualification for each work. This qualification is used for infrastructure and building works. For supervision consultant, we have another qualification. POs/PMUs are not required to have any legal qualifications but many of the PO/PMUs have professional engineer qualification or architect qualification. For private works, mostly building works, the contractor, the supervision consultant as well as the employer are recommended to have architect qualifications. We recommend using the qualification of professional engineer or registered architect in Vietnam since we consider that supervision and inspection by the employer is very important.

Source: Project team

### **6.3 Recommendations and Lessons Learned**

As having worked in CCQS Project as the Project team since April 2015 for three years and all activities in the PDM for Output 1 were complete, and the followings are the achievements in Output 1.

- ♦ C/Ps in MOC and various stakeholders well recognize issues in quality management in construction works at certain level.
- ♦ Standard Plan for Quality Management in Construction Works (SPQM) was compiled in joint efforts of C/Ps and JICA team based on the activities of Output 1 (Activity 1-1 & 1-2 in PDM) and submitted with the covering letter.
- ♦ Cost estimation on quality management was complete and agreed with the C/Ps in Output 1 and 3. The data was incorporated in the GLCE (output document in Output 3).
- ♦ Guideline for Quality Supervision and Inspection in Construction Works for SAs and POs / PMUs (GLQI) was compiled in joint efforts of C/Ps and JICA team based on the activities of Output 1 (Activity 1-1 & 1-4 in PDM) and submitted with the covering letter.
- ♦ Training workshops were held in November and December 2016 at Hanoi, Da Nang and Ho Chi Minh City and in November and December 2017 at Hanoi, Da Nang, Can Tho and Ho Chi Ming City, in which the SPQM and GLQI, and related regulations (Construction Law No. 50/2014/QH 13, Decree 46/2015/ND-CP and Circular 26/2016/TT-BXD) were presented for disseminations. Future plan after CCQS Project, such as trainings in 2018 and incorporation of the SPQM & GLQI into regulations were also explained. After presentation, question and answer sessions were done quite actively between the participants and the Project team.
- ♦ SACQI of MOC has clear intentions to incorporate essence of the SPQM and GLQI into regulations.

In addition, the followings are issues experienced in the activities of Output 1.

- ♦ Discussions were carried out only within C/Ps (SACQI) and JICA team of Output 1, though the results of Output 1 were presented in the PCU and JSC meetings, and the presentations and discussions of the same were taken place in the dialogues with construction industries (VACC, VECAS and OCAJI) and the training workshops.
- ♦ Contents of Output 1 were explained to a few PMUs only undertaking domestic projects and ODA projects.
- ♦ MOC regulates for construction industry through establishment of laws, decrees and circulars, however rarely manages construction work itself as project owner. Therefore, the effect of Output 1 does not directly extend to PMUs controlled and supervised by other ministries and organizations and also to the contractors.
- ♦ Through the review in case study projects, it was confirmed that quality management was different (i.e. record keeping of quality control, workmanship etc.) between domestic projects and JICA ODA projects. Differences are not only differences in knowledge and experiences in quality management but also in cost estimation.

With the above achievement and issues, the following actions are expected and recommended to implement by SACQI of MOC with related organizations.

- ♦ MOC (AMC and SACQI) will implement trainings on output documents (SPQM and GLQI etc.) in the year 2018 onward for dissemination.
- ♦ When revising regulations incorporating the contents of the SPQM and GLQI, MOC recognizes that training program and materials shall be modified and upgraded so that purposes of trainings will be not only dissemination but also application of new regulations.
- ♦ SACQI will apply the SPQM and GLQI in the projects on trial basis.
- ♦ SACQI will utilize the GLQI as SACQI's internal inspection procedures.
- ♦ MOC will legalize the contents of SPQM and the short term, middle term and long term improvements in the GLQI at law, decree and circular level depending on capability of

individual stakeholders.

The roadmap for achievement in CCQS Project and future actions was prepared by the Project team (C/Ps and JICA team). The roadmap for future plan was presented by C/Ps and accepted in the Fifth JSC meeting in October 2017. It was explained again by C/Ps and re-confirmed in the Special meeting for explanation of draft Project Completion Report (PCR) in January 2018.

The roadmap for Output 1 is shown in the table below.

**Table 6-6 Roadmap for Output 1 in CCQS Project and Future Plan**

Items	2015	2016	2017	2018	2019	2020	2021	2022
<b>Output 1 in CCQS Project</b>	[Gantt bar spanning 2015-2018]							
1 Compilation of Output Documents	[Gantt bar spanning 2015-2018]							
- Standard Plan for Quality Management (SPQM)	[Gantt bar 2015-2016]							
- Guideline for Quality Supervision and Inspection (GLQI)			[Gantt bar 2017-2018]					
2 Submission of Output Documents			[Gantt bar 2017-2018]					
3 Training Workshop			[Gantt bar 2017-2018]					
<b>MOC Plan to disseminate &amp; incorporate SPQM &amp; GLQI into Regulation</b>								
1 Dissemination of SPQM and GLQI to MOC and related Organizations			[Gantt bar 2017-2018]					
2 SPQM & GLQI to apply in the projects on trial basis			[Gantt bar 2017-2018]		[Gantt bar 2019-2021]			
3 GLQI to be used as SACQI's Internal Inspection Procedures			[Gantt bar 2017-2018]		[Gantt bar 2019-2021]			
4 Revision of Decree 46			[Gantt bar 2017-2018]		[Gantt bar 2019-2021]			
5 Incorporation into Revision of Law on Construction			[Gantt bar 2017-2018]		[Gantt bar 2019-2021]			

Source: Project team

Lessons learned from the experiences in CCQS Project are stated below for similar projects in future.

- ♦ In order to have general level of quality management in Viet Nam, information on quality management education and training programs in construction works shall be collected from organizations for educations and trainings, such as institutions, universities, project owners, individual consultants and contractors.
- ♦ At the commencement, interested parties for quality management in construction works will be widely searched and discussions be carried out with them in regular basis during implementation of project.

The SPQM and GLQI formulated in Output 1 and the calculated quality control cost based on the SPQM enhanced C/Ps capacity in quality management in construction works.

In case that the SPQM and GLQI are used to be the guidance for making quality management plan required by the contractor and supervising / inspecting by state authorities and POs / PMUs under the contract, the Project team considers that the quality control at construction site in Viet Nam will be improved.

Subsequently, quality control of infrastructure projects in Viet Nam will approach to the international level.



## Chapter 7 Enhancement of Safety & Environment Management (Output 2)

### 7.1 Outline of Output 2

**Policy** Capacity for identifying necessary items concerning international standard of safety and environment management of construction works is enhanced.

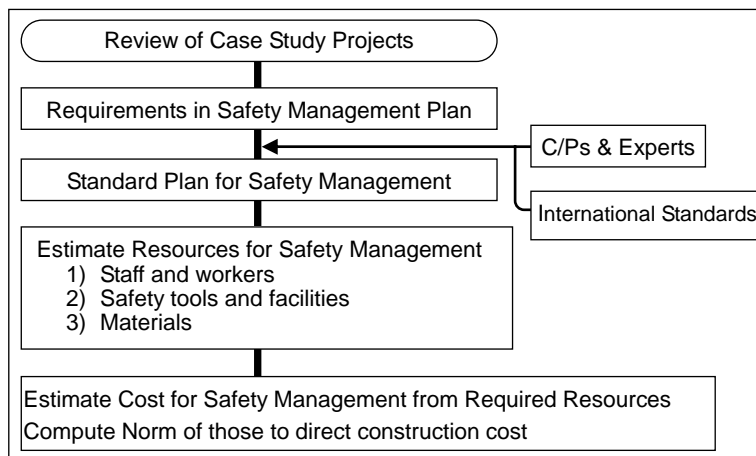
In Vietnam, safety management in construction projects is not taken care properly and hence construction accidents are indicated to increase. This is due to lack of knowledge and experiences on construction safety for engineers both from the employer and contractor side, and the cost estimation in construction projects does not correspond to the requirements on safety stipulated in specification and regulations.

Construction safety in Japan is ensured with the safety management plan prepared in advance based on the safety requirements stated in the contract and specifications (which are reflected to the cost estimation) and regular monitoring and inspections at the construction site.

In this Project, several case study projects are selected to find out the issues on safety management practice and cost in Vietnam. Based on the analysis, counterparts (C/Ps) together with Japan International Cooperation Agency (JICA) experts develop “Standard Plan for Safety Management (SPSM)” for the contractors, when applying safety requirements in international standard, for which the construction safety manual compiled in the Project for Capacity Enhancement in Construction Quality Assurance (Quality TCP) financed by JICA in 2010 to 2013 is referred..

Then the cost for construction safety management is estimated in accordance with the requirements specified in the proposed SPSM. The result of cost estimation is used for improvement of cost estimation system in Viet Nam under Output 3.

The approach to estimate the cost required for safety management based on the SPSM is depicted in Figure 7-1.



Source: Project team

**Figure 7-1 Study Approach for Cost Estimation on Safety Management**

In construction cost structure in Viet Nam, costs for safety management are included in cost for others in direct cost and indirect cost.

On the other hand, according to construction cost structure in Japan, costs for safety management are part of temporary site facilities cost and site management cost. The results of cost estimation and norm to direct costs derived from the above approach are compared with those stipulated by standardized cost estimation in both Viet Nam and Japan. The analysis is compiled in the cost estimation guideline for indirect construction contractor works in Output 3.

As stated in Section 1.2 in Chapter 1, C/Ps requested additional study in the Second JSC meeting

in April 2016, which was to formulate Standard Plan for Environment Management (SPEM) and Guideline for Safety and Environmental Inspection (GLSEI) for the State Authorities (SAs) and the Project Owners (POs) / Project Management Units (PMUs) in addition to SPSM mentioned above.

In respect of environment management, it is required for the large-scale construction project to carry out the Vietnamese Environmental Impact Assessment (EIA) and develop environment plans to mitigate and monitor adverse impact in accordance with the regulations. Even the projects which are not required to implement EIA, it is requested to make environment plans to minimize such impact on the living and natural environment of the surroundings.

After due consideration, SPEM and GLSEI were included in the output documents of Output 2 in Third JSC meeting in October 2016.

Through the above approach, State Authority of Construction Quality Inspection (SACQI) capacity for identifying necessary items concerning international standard of safety and environment management of construction works is enhanced. The SPSM, SPEM and GLSEI prepared in the above case study projects and study on current regulations in Viet Nam are reviewed and updated as required, including the cost estimation on safety management.

As described in the future plan of Table 7-10 in Section 7.3, SPSM, SPEM and GLSEI will be disseminated through trainings and applied on trial, and then incorporated in legal regulations.

## **7.2 Activities**

### **7.2.1 Review of the Current Practices of Safety and Environment Management**

#### **(1) Review Process of Case Study Projects for Safety Management**

In order to understand the current practices of safety management for construction projects and to identify the issues, the case study projects were selected. Review process was based on two approaches; document review and site reconnaissance as explained in Chapter 5.

#### **(2) Document Review of Case Study Project for Safety Management**

The documents related to safety and health management were reviewed by CPMU members. The contents in the safety management plans are summarized in Table 7-1. Both state budget projects in Vietnam and JICA projects for case study and one project in Japan were compared. The safety management plans of several other projects in neighbor countries and developed countries were also reviewed by CPMU members.

The components to be included in the SPSM were studied and discussed in the next section.



Table 7-1 Review on Safety and Health Management Plan in Various Projects

Items in SM plan Policy	Circular 22/2010 (Reference)		State Budget Project			JICA		Japan	
	1	2	3	5	6	7	7	7	7
Organization	<ul style="list-style-type: none"> <li>○ Purpose of SMP General rules</li> <li>△ Implementation organization (no chart)</li> </ul>	<ul style="list-style-type: none"> <li>○ Organization structure</li> </ul>	<ul style="list-style-type: none"> <li>○ Policies</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Policy</li> </ul>	<ul style="list-style-type: none"> <li>○ General</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Organization structure</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Organization structure</li> </ul>	<ul style="list-style-type: none"> <li>○ Basic Policy</li> </ul>	<ul style="list-style-type: none"> <li>○ Basic Policy</li> </ul>
Roles and Responsibilities	<ul style="list-style-type: none"> <li>△ Responsibilities of project entities</li> </ul>	<ul style="list-style-type: none"> <li>△ Organized by company</li> </ul>	<ul style="list-style-type: none"> <li>○ Authorities and responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Officers at the Sites</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Measures</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Measures</li> </ul>	<ul style="list-style-type: none"> <li>○ Responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>○ Responsibilities</li> </ul>	<ul style="list-style-type: none"> <li>○ Responsibilities</li> </ul>
Education and Training	<ul style="list-style-type: none"> <li>△ Provide safety trainings</li> </ul>	<ul style="list-style-type: none"> <li>△ Organized by company</li> </ul>	<ul style="list-style-type: none"> <li>○ Training on safety and environment</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Information and Training</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Training</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Training</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Education and Training Plan</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Education and Training Plan</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Education and Training Plan</li> </ul>
Safety Management Activities	<ul style="list-style-type: none"> <li>△ Contractor's responsibility</li> </ul>	<ul style="list-style-type: none"> <li>△ Implementation organization (meeting/patrol)</li> </ul>	<ul style="list-style-type: none"> <li>○ Meetings on safety and environment</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Patrol</li> <li>○ Safety Meetings</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Inspections</li> <li>○ Safety meetings</li> <li>○ Supervision and auditing</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Inspections</li> <li>○ Safety meetings</li> <li>○ Supervision and auditing</li> </ul>	<ul style="list-style-type: none"> <li>○ Daily Safety Activity Cycle</li> <li>○ Periodical meetings, Inspection, Patrol, etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Daily Safety Activity Cycle</li> <li>○ Periodical meetings, Inspection, Patrol, etc.</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety measures during construction (by the type of accidents)</li> </ul>
Safety Guidance Standards for Special Works	<ul style="list-style-type: none"> <li>○ Method statements involving electricity</li> <li>○ Prevent accidents</li> <li>○ Fencing to prevent falling accidents</li> <li>○ Clean and tidy site</li> <li>○ Sufficient PPE for workers</li> <li>○ Notice/warning boards at the construction site</li> </ul>	<ul style="list-style-type: none"> <li>○ OHS Measures for main work (by the type of work)</li> <li>○ Prevention of fire, explosion</li> <li>○ Traffic Safety</li> <li>○ Safety facilities</li> </ul>	<ul style="list-style-type: none"> <li>○ Standards and codes during construction (by the type of accidents)</li> <li>○ Health care plan at site (PPE)</li> </ul>	<ul style="list-style-type: none"> <li>○ Plant, Equipment and Qualified Operator</li> <li>○ Works</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Regarding Construction Methods</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Regarding Construction Methods</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety measures during construction (by the type of accidents)</li> </ul>	<ul style="list-style-type: none"> <li>○ Health care (PPE)</li> <li>○ Site safety measures</li> </ul>	<ul style="list-style-type: none"> <li>○ Health care (PPE)</li> <li>○ Site safety measures</li> </ul>
Safety Equipment and Tools	<ul style="list-style-type: none"> <li>○ Fire and explosion safety at the construction site</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety in rain, storm seasons</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety measures in flood prevention and disaster mitigations</li> </ul>	<ul style="list-style-type: none"> <li>○ First Aid and Emergency Contacts</li> </ul>	<ul style="list-style-type: none"> <li>○ First Aid and Rescue</li> </ul>	<ul style="list-style-type: none"> <li>○ First Aid and Rescue</li> </ul>	<ul style="list-style-type: none"> <li>○ Response Plan to Emergencies and Unforeseen Circumstances</li> </ul>	<ul style="list-style-type: none"> <li>○ Response Plan to Emergencies and Unforeseen Circumstances</li> </ul>	<ul style="list-style-type: none"> <li>○ Response Plan to Emergencies and Unforeseen Circumstances</li> </ul>
Response to Emergencies and Unforeseen Circumstances	<ul style="list-style-type: none"> <li>○ Fire and explosion safety at the construction site</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety in rain, storm seasons</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety measures in flood prevention and disaster mitigations</li> </ul>	<ul style="list-style-type: none"> <li>○ First Aid and Emergency Contacts</li> </ul>	<ul style="list-style-type: none"> <li>○ First Aid and Rescue</li> </ul>	<ul style="list-style-type: none"> <li>○ First Aid and Rescue</li> </ul>	<ul style="list-style-type: none"> <li>○ Response Plan to Emergencies and Unforeseen Circumstances</li> </ul>	<ul style="list-style-type: none"> <li>○ Response Plan to Emergencies and Unforeseen Circumstances</li> </ul>	<ul style="list-style-type: none"> <li>○ Response Plan to Emergencies and Unforeseen Circumstances</li> </ul>
Monitoring and Reporting	<ul style="list-style-type: none"> <li>△ Contractor's responsibility</li> </ul>	<ul style="list-style-type: none"> <li>△ Implementation organization</li> </ul>	<ul style="list-style-type: none"> <li>○ Reports and investigations on accidents</li> <li>○ Health care plan at site</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Reports</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>
Workers Hygiene	<ul style="list-style-type: none"> <li>○ Medical check-up to all workers</li> </ul>	<ul style="list-style-type: none"> <li>○ Environmental management (OHS at construction site)</li> </ul>	<ul style="list-style-type: none"> <li>○ Public relation and safety for community</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Reports</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>
Safety for the third-party	<ul style="list-style-type: none"> <li>○ Environmental management (Safety assurance for residents around the construction site)</li> </ul>	<ul style="list-style-type: none"> <li>○ Environmental management (Safety assurance for residents around the construction site)</li> </ul>	<ul style="list-style-type: none"> <li>○ Public relation and safety for community</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Reports</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>
Others	<ul style="list-style-type: none"> <li>○ Approval of construction plan &amp; design</li> <li>○ Professional qualifications</li> <li>○ Violations against labor safety rules</li> </ul>	<ul style="list-style-type: none"> <li>○ Environmental management (Safety assurance for residents around the construction site)</li> </ul>	<ul style="list-style-type: none"> <li>○ Public relation and safety for community</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Reports</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>
Contractor	<ul style="list-style-type: none"> <li>○ Approval of construction plan &amp; design</li> <li>○ Professional qualifications</li> <li>○ Violations against labor safety rules</li> </ul>	<ul style="list-style-type: none"> <li>○ Environmental management (Safety assurance for residents around the construction site)</li> </ul>	<ul style="list-style-type: none"> <li>○ Public relation and safety for community</li> </ul>	<ul style="list-style-type: none"> <li>○ Safety Reports</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Reporting Records of Accidents</li> <li>○ Health Hazards</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>	<ul style="list-style-type: none"> <li>○ Monitoring and Records</li> </ul>

Source: Project team

Note:

1. New Office of Cau Giay People's Court, 2. Ha Long – Hai Phong Expressway, 3. Lai Chau Hydro Power Plant, 4. Second Transport Sector Loan for National Road Network Improvement Project - Tham Bridge, Thanh Hoa, 6. Lach Huyen Port project (Road and Bridge), 7. Shin-Tomei Expressway

(3) Site Visit of Case Study Project for Safety Management

As described in Chapter 5, CPMU members conducted the site visits for case study projects. Actual implementation of safety measures to prevent accidents and protect workers' health was observed at construction sites.

CPMU members also discussed the issues on construction safety management with the PMU, the supervision consultants and the contractors based on the questionnaires and results of the site reconnaissance.

The facts and issues identified by the site visits are summarized as follows:

- i) Safety Management Plan and Method Statements were formulated, based on the Vietnamese regulations such as Circular No.22/2010/TT-BXD.
- ii) The organization on safety management was established in most of the projects. However, the safety manager and/or safety officers were not always on duty at the construction sites in some projects.
- iii) Safety meetings, site inspections and daily patrol were not seemed to be conducted regularly.
- iv) Safety education and training for workers were said to be provided before workers enter the construction site, but not seemed to be conducted regularly at the construction site.
- v) Personal protective equipment (PPE) was provided for workers. However, safety shoes should be provided for workers associated with heavy duty work.
- vi) Measures for prevention of falling accidents were not sufficiently taken into account at some construction sites.
- vii) The plans for responding to emergencies and unforeseen circumstances such as heavy storm and flooding were prepared in most of the projects.
- viii) Most of the contractors feel that cost for safety management determined in the contract is not sufficient to implement the safety management plan.

(4) Document Review of Case Study Project for Environment Management

From the collected materials of the case study which implemented during the first year of the Project, in late 2016 the Project team specifically reviewed the environment management plan, and identified issues to verify whether proper environment management was in place. For this exercise, the following points were to be considered; situation of the surrounding environment of the construction sites, operation plan of construction machinery and construction vehicle, information on noise/vibration etc. which may occur, feasible mitigation measures at the construction site, implementation of the monitoring to comprehend the effectiveness of mitigation measures, and implementation system of the environment management.

## **7.2.2 Standard Plan for Safety Management (SPSM)**

(1) Development Process of SPSM

SPSM was drawn up with C/Ps in SACQI Safety Division for the issues identified with the case study projects, following the international standards on safety and health management on construction works. The development process of the SPSM is flowcharted in Figure 7-2.

Safety management practices in Japan were used as reference for international standards. Safety management in neighboring countries (e.g., Singapore) was also taken into account as the international standards. With reference to these commonly used international standards, the SPSM applicable to Viet Nam was discussed with C/Ps to obtain their full understanding of the SPSM approach.



Source: Project team

**Figure 7-2 Development Process of Standard Plan for Safety Management**

(2) The Objectives of SPSM

The objectives of SPSM are:

- i) To help the contractors to check the necessary items and contents when the safety management plan is prepared; and,
- ii) To assist the employers to review the plan whether the necessary items and contents are included in the safety management plan.

Contents of SPSM should be met with the goal, i.e., targeted achievement level of construction safety over the next few years in Viet Nam, as well as the new decrees and circulars of Viet Nam.

(3) Main Features of the SPSM

As stated above, the issues identified on safety management practice at construction sites in Viet Nam are summarized in Table 7-2. The corresponding measures to be reflected in the safety management plan are also shown in this table.

**Table 7-2 Major Issues and Measures Reflected in Standard Plan for Safety Management**

Major Issues		Measures Reflected in SPSM
Lack of safety management system at construction site	→	“Safety Organization” and “Safety Council” (Chapter 3 in the SPSM)
Not show-up of full-time safety supervisors / officers	→	Appointment of “full-time safety supervisors / officers” (Chapter 3 in the SPSM)
Lack of safety awareness of workers	→	“Education and Training” at construction site (Chapter 4 in the SPSM)
Lack of regular safety management activities	→	“Safety Working Cycle” at construction site (Chapter 5 in the SPSM)
Frequency of accidents and incidents by machinery, cranes and hoists in particular is high.	→	“Safety Use of Construction Machinery” (Chapter 7 in the SPSM)

Source: Project team

(4) Contents of SPSM

The contents of SPSM were determined through discussion in the CPMU meetings as shown in Table 7-3.

**Table 7-3 Contents of Standard Plan for Safety Management**

Chapter	Title and Contents
Chapter 1	Introduction
Chapter 2	Basic Policies for Safety Management
Chapter 3	Organizational Chart for Safety Management and Responsibilities of Project Stakeholders
Chapter 4	Safety Education and Training
Chapter 5	Safety Management Activities – Safety Working Cycles
Chapter 6	Technical Guidance for Safe Execution
Chapter 7	Safety Use of Construction Machinery
Chapter 8	Safety Equipment and Protective Gear
Chapter 9	Occupational Health and Environmental Management
Chapter 10	Response to Emergencies and Unforeseen Circumstances
Chapter 11	Monitoring, Reporting and Information Sharing System

Source: Project team

(5) Outline of the SPSM

1) Introduction

The first chapter introduces the objectives of the Safety Management Plan and provides the project description of the said construction project.

2) Basic Policies for Safety Management

The basic policies for safety management applicable during construction are stated based on the scope of work, the environment where the works are performed, relevant laws and regulations, contract documents and other applicable documents.

3) Organizational Structure and Roles and Responsibilities of Project Stakeholders

The contractor shall establish safety organization to manage safety and prevention of accidents at construction sites. A consultative and coordinating organization called “safety and health council” is recommended for the case of multi-layer contract.

Roles and responsibilities of the project stakeholders are specified including:

- ♦ Prime Contractor (Project Manager/Site Manager, Safety Manager/Supervisor, Safety Officers, Foremen)
- ♦ Subcontractor
- ♦ Project Owner (PO)
- ♦ Project Management Unit (PMU)
- ♦ Supervision Consultant
- ♦ Workers

Supervisor responsible for safety management and safety officers shall have a license in accordance with Vietnamese regulations (Decree 44/2016/ND-CP).

4) Safety Education and Training

The contractor shall provide the safety education and training during construction to maintain safety at the site:

- ♦ All employees including new entrants
- ♦ Employees executing the works with strict requirement on safety
- ♦ Emergency response personnel

The contractor shall conduct the training sessions on safety and hygiene for employees at least once a month:

- ♦ Training program should be planned according to construction work plan.
- ♦ The training contents should be determined based on the foreseen risks of the works.

5) Safety Management Activities - Safety Working Cycle

The contractor shall set up the safety working cycles for their safety management activities at the construction site. The basic concept of the safe working cycles is to combine assurance of construction quality and construction safety.

The safe working cycles are classified into:

- ♦ Daily safe working cycle
- ♦ Weekly safe working cycle
- ♦ Monthly safe working cycle

6) Technical Guidance for Safe Execution

Basic but indispensable safety standards and technical guidance shall be provided in SPSM.

- ♦ Priority safety measures for preventing the typically foreseen accidents
- ♦ Especially for the works, safety measures shall be intensively implemented at their construction site

More specific measures for each work can be specified in Method Statements based on the identified risks of the project and construction site.

i) Safety measures by the type of accident

- ♦ Falling
- ♦ Flying or falling objects
- ♦ Collapse of structures
- ♦ Explosion accidents
- ♦ Fire
- ♦ Traffic accidents
- ♦ Third-party accidents
- ♦ Occupational hygiene

Safety measures by the type of work are recommended to be included in the SPSM by SACQI.

ii) Safety Measures by the type of work

- ♦ Electric shock
- ♦ Underground work
- ♦ Work over water
- ♦ Welding
- ♦ False work and scaffolding

7) Safety Use of Construction Machinery

When using construction machinery, the contractor shall consider the following particulars.

- ♦ Laws and Regulations
- ♦ Operators
- ♦ Inspection and Maintenance
- ♦ Safety Devices
- ♦ Stationing of Flagman
- ♦ Prevention of Unauthorized Access
- ♦ Measures for Suspension and Completion of Work
- ♦ Provision of Education on Safety

Because of higher frequency of accidents and incidents, the following machineries are shown in SPSM.

- i) Cranes: Checklist of automotive cranes and tower cranes are provided.
- ii) Hoists

8) Safety Equipment and Protective Gear

The contractor ensures that workers use personal protective gear appropriate for the type of work and work conditions.

9) Occupational Health and Environmental Management

Health management of workers is one of the important roles of the contractor to secure safety of the construction site:

- ♦ Health Management System
- ♦ Occupational Hygiene
- ♦ Environmental Management Plan at Construction Site

10) Response to Emergencies and Unforeseen Circumstances

The contractor shall show the procedures and responsibilities to respond the emergencies and unforeseen circumstances:

- ♦ Response to emergencies considered to be caused by accidents
- ♦ Response to any unforeseen circumstances considered to be caused by natural disasters such as rainstorms or earthquakes

11) Monitoring, Reporting and Information Sharing System

The contractor shall monitor the actual practices of the safety management specified in the safety management plan and the method statements on safety.

The contractor shall report the accidents and incidents to relevant authorities and investigate the causes. The corrective action and disciplinary measures to prevent the recurrence of accidents/incidents shall be prepared. In addition, disciplinary procedures shall be determined, including sanctions in case of continuous violations.

The contractor shall share such measures and corrective measures to all employees and stakeholders.

(6) Further Development of the SPSM

First draft SPSM was prepared and submitted to CPMU meeting in December 2015 and since then, the contents of SPSM were discussed, revised and then agreed in CPMU meeting in April 2016.

After basic agreement in CPMU, the draft SPSM was presented in the meeting between MOC Project Preparation Members (at the time PCU was not organized yet) and JICA team and submitted in the Second JSC meeting in April 2016. Subsequently, the dialogue with the construction industries in Viet Nam (Vietnam Association of Construction Contractors: VACC, Vietnam Engineering Construction Association: VECAS and Overseas Construction Association of Japan Incorporation: OCAJI) was arranged and the contents of SPSM were discussed with them and comments were received from them in April 2016. After reviewing all comments, the SPSM was compiled again and submitted to MOC in June 2016 with the covering letter.

SPEM was included as additional one in output document in October 2016 and after due consideration among the Project team as well as discussion in CPMU meeting, it was agreed to combine SPSM and SPEM as one volume. Hence further development of SPSM is described in Section 7.2.4.

### **7.2.3 Cost Estimation on Safety Management**

The cost for safety management was estimated by the ways shown below and added to the total construction cost.

- ♦ Common Indirect cost: seven items categorized as safety management cost in Guideline on Cost Estimation for Indirect Construction Works (GLCE- 1), such as cost of safety supplies like helmets, safety belt, safety shoes, gloves etc. and cost of safety committee and other safety activities excluding training and so on
- ♦ Site Management Cost: two items categorized as safety management cost in GLCE- 1, such as

safety activity and training, and cost of meeting for safety and health education

SPSM was a basis to estimate the required cost of safety management of the construction project. Two case study projects shown below were selected:

- ♦ JICA: Second Transport Sector Loan for National Road Network Improvement Project, Tham Bridge in Thanh Hoa (hereinafter referred to as “Tham Bridge project”); and,
- ♦ State budget project: Construction of Road from Ha Long City to Hot River Bridge, Package XL-01 (hereinafter referred to as “Ha Long Expressway project”).

Among the safety management cost, the common indirect cost was estimated for two projects together with CPMU members. The cost including facilities, equipment, personnel expenses of engineers and miscellaneous expenses were summed up. Unit costs were based on the standard prices currently used in Viet Nam. The estimated cost for safety management was to compute the ratio to the direct construction cost.

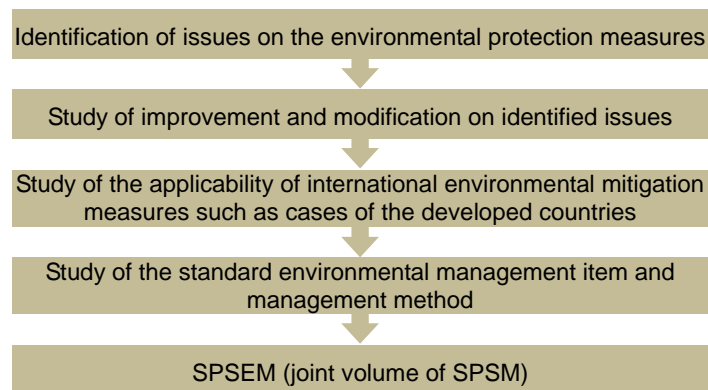
Results of cost estimation were provided to Output 3 and incorporated into the Guideline on Cost Estimation for Indirect Construction Works.

#### 7.2.4 Standard Plan for Safety and Environment Management (SPSEM)

SPSM was developed and completed as stated in Section 7.2.2, and since SPEM was added in the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project) in October 2016, environment management aspect was decided to incorporate into SPSM and the Standard Plan for Safety and Environment Management (SPSEM) was then developed.

##### (1) Development Process of SPSEM

In addition to Section 7.2.2 (1) Development Process of SPSM, it was necessary to comply with the laws and regulations of Viet Nam, such as the EIA system and the environmental standards. Also, as for the environmental protection measures which the contractors are to implement, reference was made to the cases of the developed countries such as Japan, and the feasible countermeasures were incorporated into the SPSEM applicable to Viet Nam.



Source: Project team

**Figure 7-3 Development Process of Standard Plan for Safety and Environment Management**

##### (2) The Objectives of SPSEM

The objectives of the SPSEM are:

- To help the contractors to check the necessary items and the contents when the safety and hygiene, and the environment management plans are prepared; and
- To assist the employers to review the plans whether the necessary items and the contents are included in the safety and hygiene, and the environment management plans.



(3) Main Features of SPSEM

The issues identified on safety and environment management practices at the construction sites in Viet Nam are summarized in Table 7-4 in addition to Table 7-2. The corresponding measures to be reflected in the safety and environment management plans are shown in Table 7-2 and Table 7-4.

**Table 7-4 Major Issues and Measures Reflected in Standard Plan for Safety and Environment Management**

Major Issues		Measures Reflected in "SPSEM"
The safety management personnel often cover the environment management responsibilities.	→	SPSEM segregates the Safety Management Plan and the Environment Management Plan. If applicable, the safety management and the environment management can be fulfilled respectively. Even in the case that the same personnel take care of both safety and environment, those two tasks are clearly explained in the SPSEM.
Safety and environment management plans are developed however, actual implementation is not always as described in the plans or only limited activities are conducted.	→	"PDCA" and working cycles are introduced in order to strengthen the whole cycle of work execution: "Plan", "Do", "Act" and "Check".
Training is not always organized regularly.	→	Regular training plan is introduced.

Source: Project team

(4) Content of SPSEM

The contents of SPSEM were determined through discussion in the CPMU meetings as shown in Table 7-5.

With the comments of two (2) outside experts of SACQI on SPSM in March 2017 and on SPSEM on September 2017, the contents of Part One: General Provision, Part Two: Standard Plan for Safety Management (SPSM) and Part Three: Standard Plan for Environment Management (SPEM) were revised accordingly. The revisions were accepted by the outside experts.

**Table 7-5 Contents of Standard Plan for Safety and Environment Management**

Chapter	Title and Contents	Remarks
<b>Part One</b>	<b>General Provision</b>	
Chapter 1	Introduction	<i>Chapter Moved</i>
Chapter 2	Relevant Laws and Regulations	<i>New</i>
<b>Part Two</b>	<b>Standard Plan for Safety Management (SPSM)</b>	
Chapter 1	Basic Policies for Safety Management	<i>Revised from SPSM</i>
Chapter 2	Organizational Chart for Safety Management and Responsibilities of Project Stakeholders	<i>Revised from SPSM</i>
Chapter 3	Safety Education and Training	<i>Revised from SPSM</i>
Chapter 4	Safety Management Activities - Safety Working Cycles	<i>Revised from SPSM</i>
Chapter 5	Technical Guidance for Safe Execution	<i>Revised from SPSM</i>
Chapter 6	Safety Use of Construction Machinery	<i>Revised from SPSM</i>
Chapter 7	Safety Equipment and Protective Gear	<i>Revised from SPSM</i>
Chapter 8	Occupational Health Management	<i>Revised from SPSM</i>
Chapter 9	Technical Guidance for Prevention of Public Accidents	<i>Chapter moved &amp; revised</i>
Chapter 10	Technical Guidance for Prevention of Traffic Accidents	<i>Chapter moved &amp; revised</i>
Chapter 11	Response to Emergencies and Unforeseen Circumstances	<i>Revised from SPSM</i>
Chapter 12	Monitoring, Reporting and Information Sharing System	<i>Revised from SPSM</i>
<b>Part Three</b>	<b>Standard Plan for Environment Management (SPEM)</b>	
Chapter 1	Basic Policies for Environment Management	
Chapter 2	Organizational Chart for Environment Management and Responsibilities of Project Stakeholders	
Chapter 3	Environment Training	
Chapter 4	Environment Management Activities - Environment Working Cycles	



Chapter	Title and Contents	Remarks
Chapter 5	Technical Guidance for Environment Execution	
Chapter 6	Response to Emergencies and Unforeseen Circumstances	
Chapter 7	Monitoring, Reporting and Information Sharing System	

Source: Project team

(5) Outline of SPSEM

**Part One: General Provision**

Chapter 1: Introduction

This chapter introduces the objectives of the safety management plan and environment management plan and provides the project description of the said construction project.

Chapter 2: Relevant Laws and Regulations

This chapter shows all relevant laws and regulations on safety and environment activities.

**Part Two: Standard Plan for Safety Management (SPSM)**

Chapter 1: Basic Policies for Safety Management

The basic policies for safety management applicable during construction are stated based on the scope of work, compliance with relevant laws and regulations and PDCA for safety management.

Chapter 2: Organizational Chart for Safety Management and Responsibilities of Project Stakeholders

The safety organization chart, safety and health council, construction site layout and roles and responsibilities of project stakeholders are described.

Chapter 3: Safety Education and Training

The safety education and training are described for each case, such as all project stakeholders including new entrants, worker, the works with strict requirement on safety, and the emergency response personnel.

Chapter 4: Safety Management Activities - Safety Working Cycle

The safe working cycles are to combine construction quality and construction safety with daily safe working cycle, weekly safe working cycle, and monthly safe working cycle.

Chapter 5: Technical Guidance for Safe Execution

Basic but indispensable safety standards and technical guidance are provided with the details, such as scaffolding, flying or falling objects, electricity, and so on.

Chapter 6: Safety Use of Construction Machinery

Undertaking work using construction machinery, the particulars to be considered are the laws and regulations, operators, inspection and maintenance, safety devices, and the stationing of flagman, prevention of unauthorized access, measures for suspension and completion of work and provision of education on safety. Safe use of cranes and hoists are provided as examples.

Chapter 7: Safety Equipment and Protective Gear

The contractor ensures that workers use personal protective gear appropriate for the type of work and work conditions.

Chapter 8: Occupational Health Management

Health management of workers is one of the important issues to secure the safety at the construction site, such as workers' health management, health examination, occupational hygiene and instructions for first aid and emergency aid.

Chapter 9: Technical Guidance for Prevention of Public Accidents

When undertaking work with a risk of third-party accidents, the contractor shall review the measures considering the particular work conditions.

#### Chapter 10: Technical Guidance for Prevention of Traffic Accidents

When there is a risk of traffic accidents on public roads in connection with the construction work, the contractor shall adopt the measures as appropriate for particular work conditions.

#### Chapter 11: Response to Emergencies and Unforeseen Circumstances

The contractor shall show the procedures and responsibilities to respond the emergencies and unforeseen circumstances, including emergency communication network and procedures for evacuation.

#### Chapter 12: Monitoring, Reporting and Information Sharing System

The contractor shall monitor and report on actual implementation of the safety management plan, and report and investigate the causes of accidents/incidents. The corrective action and disciplinary measures to prevent the recurrence of accidents/incidents shall be prepared. In addition, disciplinary procedures shall be determined, including sanctions.

### **Part Three: Standard Plan for Environment Management (SPEM)**

#### Chapter 1: Basic Policies for Environment Management

The basic policies for environment management applicable during construction are stated based on the scope of work, the environment where the works are performed including surrounding area, relevant laws and regulations, contract documents and other applicable documents.

#### Chapter 2: Organization Chart for Environment Management and Responsibilities of Project Stakeholders

The contractor shall establish environment organization chart to manage environment, and protect environment at the construction site. A consultative and coordinating organization called “environment council” is recommended.

Roles and responsibilities of the project stakeholders are specified as below:

- ◆ Prime Contractor (Project Manager / Site Manager, Environment Manager / Environment Supervisor, Environment Officers, Foremen)
- ◆ Subcontractor
- ◆ PO
- ◆ PMU
- ◆ Supervision Consultant
- ◆ Workers

#### Chapter 3: Environment Training

The contractor shall provide the environment training to protect environment during the construction works at the site:

- ◆ All employees including new entrants
- ◆ Employees executing the works with environmental requirement
- ◆ Emergency response personnel

The contractor shall conduct the training sessions on environment for employees at least once a month:

- ◆ Training program should be planned according to construction work plan.
- ◆ The training contents should be determined based on the foreseen risks of the works.

#### Chapter 4: Environment Management Activities – Environment Working Cycles

The contractor shall set up the environmental working cycles. The basic concept of the environmental working cycles is to combine construction quality and environmental protection. The environmental working cycles are classified into:

- ◆ Weekly environment working cycle
- ◆ Monthly environment working cycle

The contractor shall highlight the environmental awareness as well as environment patrol in a daily basis.

#### Chapter 5: Technical Guidance for Environment Execution

The contractor shall take protective measures against adverse effects/impacts on the natural environment and surrounding community to meet the rigorous standards as well as to prevent exceeding the acceptable level stipulated in the technical regulations on environment, and conduct monitoring to ensure the effectiveness of such measures in accordance with the environmental management plan and monitoring plan.

The followings are main items to be checked:

- ♦ Dust
- ♦ Noise
- ♦ Vibration
- ♦ Waste water
- ♦ Solid waste
- ♦ Exhaust gas
- ♦ Radiation
- ♦ Soil
- ♦ Hazardous substances
- ♦ Flora and Fauna
- ♦ Recycle

#### Chapter 6: Response to Emergencies and Unforeseen Circumstances

The contractor shall show the procedures and responsibilities to respond the emergencies and unforeseen circumstances:

- ♦ Response to emergencies: explosion, chemical spills, land slide, slope failure, etc.
- ♦ Response to unforeseen circumstances: natural disaster, heavy storm and flood, earthquake, etc.

In the case that the environmental related accident occurred, the environment manager should inform the safety manager and cooperate together for further instruction.

Any of the emergency instruction should be given only by the safety manager to avoid confusion.

#### Chapter 7: Monitoring, Reporting and Information Sharing System

The contractor shall monitor the actual practices of the environment management specified in the environment management plan and the method statements on environment.

The contractor shall report the adverse effects/impacts on environment attributable to construction work to relevant authorities and investigate the causes. The corrective action and disciplinary measures to prevent the recurrence of adverse effects/impacts shall be prepared. In addition, disciplinary procedures shall be determined, including sanctions in case of continuous violations.

The contractor shall share such measures and corrective measures to all employees and stakeholders.

#### (6) Submission of SPSEM

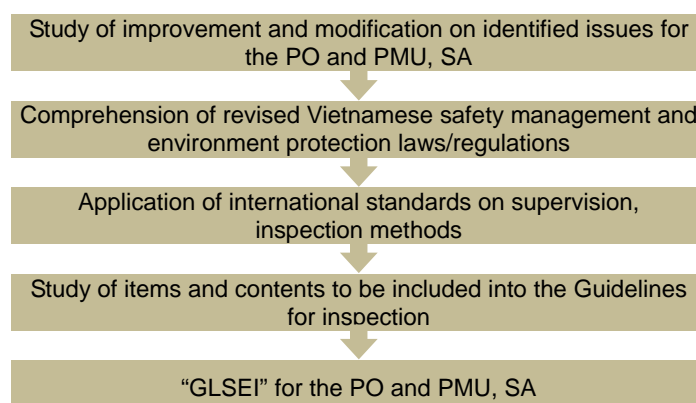
SPSEM was agreed in CPMU meetings in September to October 2017. Then the Project team presented GLSEM in PCU meeting and the Fifth JSC meeting in October 2017. Subsequently, it was submitted to MOC with the covering letter in October 2017.

### **7.2.5 Guideline for Safety and Environmental Inspection (GLSEI)**

#### (1) Development Process of GLSEI

In line with the SPSEM, in order to further improve the safety and environment management for the construction projects in Viet Nam, it was required to enhance the management system in the Project Owners (POs) / Project Management Units (PMUs) and the State Authorities (SAs) and to conduct regular supervision and inspection for the projects.

To materialize those, “Guideline for Safety and Environmental Inspection (GLSEI)” in Construction for the POs/PMUs and the SAs was developed.



Source: Project team

**Figure 7-4 Development Process of Guideline for Safety and Environmental Inspection**

When studying the contents of GLSEI for the POs/PMUs and the SAs, it was necessary to grasp the responsibilities of the POs/PMUs and SAs in terms of management, and also to refer to the Japanese and the other developed countries’ supervision and inspection methods.

GLSEI should be applicable as well as feasible to Viet Nam in near future based on the latest version of Vietnamese regulations.

(2) The Objectives of GLSEI

The objectives of the GLSEI are:

- i) To help the POs / PMUs, including supervision consultants (SVCs) to check and confirm necessary actions for safety and environmental inspection in construction works;
- ii) To help the SAs to check and confirm necessary actions for safety and environmental inspection in construction works; and
- iii) To help the contractors to capture what views and actions the POs/PMUs and the SAs have for safety and environmental inspection in construction works.

(3) Main Features of GLSEI

The issues identified on the safety and environment inspection practices at the construction sites in Viet Nam are summarized in Table 7-6. The corresponding measures to be reflected in the safety and environmental inspection are also shown in this table.

**Table 7-6 Major Issues and Measures Reflected in Guideline for Safety and Environmental Inspection**

Major Issues		Measures Reflected in “GLSEI”
Safety and environment management roles are not clearly divided. Therefore, the inspection points are also unclear.	→	Clear demarcation of responsibilities for safety management and environment management are incorporated.
Safety related items for inspection are relatively limited.	→	Set of inspection items on safety (checklist) are incorporated.
Inspection items, specifically for the environment, are rather unclear.	→	Set of inspection items on environment (checklist) are incorporated.
Frequency of inspection is insufficient.	→	Proper frequency of inspection is suggested.
Contents of training have room for improvement.	→	Contents of safety/environment management training are incorporated as check items.

Source: Project team

(4) Contents of GLSEI

The contents of GLSEI were determined through discussions in the CPMU meeting as shown below.

**Table 7-7 Contents of Guideline for Safety and Environmental Inspection**

Chapter	Title and Contents
<b>Part One</b>	<b>General Provision</b>
Chapter 1	Scope of Application
Chapter 2	Relevant Laws and Regulation
<b>Part Two</b>	<b>Safety Inspection</b>
Chapter 1	Basic Policies for Safety Management
Chapter 2	Inspection of Safety Execution by POs/PMUs
Chapter 3	Safety Use of Construction Machinery
Chapter 4	Occupational Health Management
Chapter 5	Inspection of Safety Execution by the SAs
<b>Part Three</b>	<b>Environment Inspection</b>
Chapter 1	Basic Policies for Environment Management
Chapter 2	Inspection for Environment Execution by the POs/PMUs during Construction
Chapter 3	Inspection on Environment Execution by the SAs
Appendix A	Safety Inspection Checklist for POs/PMUs and SAs
Appendix B	Record of Occupational Incident by POs/PMUs
Appendix C	Environmental Inspection Checklist for POs/PMUs and SAs

Source: Project team

(5) Outline of GLSEI

**Part One: General Provision**

Chapter 1: Scope of Application

This chapter describes relevant projects, relevant parties and application provisions.

Chapter 2: Relevant Laws and Regulations

This chapter shows major relevant laws and regulations on safety and environment activities.

**Part Two: Safety Inspection**

Chapter 1: Basic Policies for Safety Management

The basic policies for safety management, compliance with relevant laws and regulations in the construction site, roles and responsibilities of the stakeholders for safety management, contents of safety management plan by the contractor, and safety and health council are described.

Chapter 2: Inspection of Safety Execution by POs/PMUs

The items to be considered by POs/PMUs are described, such as compliance of safety-related laws and regulations, compliance of safety management plan and method statement on safety, incidents and accidents, and emergencies and unforeseen circumstances.

Chapter 3: Safety Use of Construction Machinery

The items to be inspected by the POs/PMUs are described, such as general rules and safety measures by type of machinery with inspection checklist.

Chapter 4: Occupational Health Management

Health management system and occupational hygiene are described.

Chapter 5: Inspection of Safety Execution by the SAs

The items to be considered by the SAs are described, such as compliance of safety-related laws and regulations, compliance of safety management plan and method statement on safety, safety use of construction machinery, frequency and timing of the inspection of the construction work, etc.

### **Part Three: Environmental Inspection**

#### **Chapter 1: Basic Policies for Environment Management**

The basic policies for environment management, compliance with relevant legal regulations, roles and responsibilities of the stakeholders, contents of environment management plan, environment council are described.

#### **Chapter 2: Inspection for Environmental Execution by the POs/PMUs during Construction**

Compliance with related legal regulations in construction, compliance with environment management plan and method statements on environment including measures for protection of environment, and emergencies and unforeseen circumstances are explained.

#### **Chapter 3: Inspection on Environment Execution by the SAs**

Compliance with related legal regulations in construction, compliance with environment management plan and method statements on environment, emergencies and unforeseen circumstances, as well as items and frequency of the inspection are stated.

#### **(6) Submission of GLSEI**

After incorporating the comments from C/Ps and two outside experts, GLSEI was compiled and agreed in CPMU meetings in September to October 2017. Then the Project team presented GLSEI in PCU meeting and the Fifth JSC meeting in October 2017. Subsequently, it was submitted to MOC with the covering letter in October 2017.

The Project team prepared further recommendations for future practice in safety management and discussed those recommendations with C/Ps in CPMU meeting in November and December 2017. Those recommendations are as follows.

- ♦ Safety inspection by SAs shall be handed over to POs/PMUs, when POs/PMUs are capable enough.
- ♦ SAs shall collect statistic data for construction incidents and accidents, and analyze them.

After agreement with C/Ps, GLSEI was added and submitted again to MOC with the covering letter in December 2017.

### **7.2.6 Training Workshops**

#### **(1) Training Workshops in November and December 2016**

Trainings workshops were arranged in the year 2016 for staff in state authorities including MOC other than C/Ps, staff in related organizations for construction projects such as POs/PMUs, staff in Vietnamese construction industry and other entities. The details of training workshops such as date, venue, participants, program etc., are described in Chapter 11.

The outline of SPSM such as background, objective, basic policies, organization & responsibilities, education & training and safety management activities (safety working cycles, safety execution, machinery use, response to emergencies, and report & information sharing) was briefly presented and explained by JICA expert. On the other hand, C/Ps explained current practice and situation in safety management on site and current and future regulations on safety management in Viet Nam. After presentation, session of questions and answers were carried out. Major questions from participants and answers of JICA experts and C/Ps regarding safety management are summarized in table below.

**Table 7-8 Summary of Q&A on Output 2 in First Training Workshops**

Questions from Participants	Answers of JICA Experts and C/P
Now the budget for safety in construction in Viet Nam is limited. How can we improve amount of safety management cost in cost estimation?	There are 2 things to address to the question. First, safety is first priority to do and project owners, supervision consultants and contractors should be encouraged to follow safety. Second, cost estimation is being studied in CCQS Project and the project team is discussing with MOC to improve the cost estimation on safety.

Questions from Participants	Answers of JICA Experts and C/P
Does MOC have plan to establish a database for safety management? And do you have evaluation after accidents during construction to draw lesson from the accident?	At present, MOC has no plan for establishing a database for safety management. When accident occurs, evaluation is conducted to draw lesson and experience. SACQI is preparing a Circular guiding on safety in construction and 13 safety management procedures for construction machineries. It is expected to issue in 2017. In addition, under JICA project, MOC and JICA experts worked together and issued some documents on safety during construction including: 1. Safety and health manual in construction 2. Case studies on accidents and near misses in construction

Source: Project team

(2) Training Workshops in November and December 2017

Training workshops were arranged at the end of year 2017 again, similarly inviting staff in state authorities including MOC other than C/Ps, staff in related organizations for construction projects such as POs/PMUs, staff in Vietnamese construction industry and other entities. The details of training workshops such as date, venue, participants, program, etc. are described in Chapter 11.

Overall safety and environment management, the SPSEM and the GLSEI were explained by JICA expert. On the other hand, C/Ps explained overall contents in current regulations, which were mainly Circular 4 issued in March 2017 by MOC, safety management together with some issues and then future plans utilizing the SPSEM and GLSEI.

After presentation, session of questions and answers were carried out. Major questions from participants and answers of the JICA experts and C/Ps regarding safety and environment management are summarized in the table below.

**Table 7-9 Summary of Q&A on Output 2 in Third Training Workshops**

Questions from Participants	Answers of JICA Experts and C/P
Regarding cost for safety, according to Circular 04/2017/TT-BXD of MOC, the contractors can not give price which is lower than the published price while in bidding the contractors can give low price for competition. How can we deal with this issue?	Cost for safety is included in common cost. It is calculated by the norm regulated by state authority. In fact, cost for safety is sometimes reduced or eliminated by the contractors and therefore we regulate that cost for safety can not be lower than the estimated cost. We will have further discussion with MPI on this issue.
MOC is preparing circular on environment protection which needs agreement with Ministry of Natural Resources and Environment (MONRE). Have you worked with this ministry?	We are still working with the MONRE on the new circular.
How about international practice for cost estimation for safety in bidding?	Since safety is the first priority, cost for safety is not fixed. If incident related to safety occurs, responsibility will belong to the contractor first, then PO and state authorities if the incident is more serious.
Regulations on safety have been developed well, but in fact, compliance of regulations on safety is not good and there are still many accidents. Does MOC have any practical measures?	At present, MOC is revising all standards, regulations and strengthen inspection of safety in construction. We are also cooperating with JICA project team to develop manual on safety. When POs/PMUs have enough capacity, inspection of state authorities will be reduced and handed over to POs/PMUs.
According to Article 04 of Circular 04/2017/TT-BXD, before commencement of construction work, the contractors need to submit method statement (MS) on labor safety to PO for approval. So should this MS be included in construction MS for submission or be separated?	When the contractors prepare MS, MS on labor safety should be included to submit for approval. In Circular 04, requirements and criteria for labor safety have been clearer and more detailed. Outlines and forms for labor safety management plan are attached in Circular 04 for your reference.
Is there any regulations, stipulating which stakeholder is obligated to take part in labor safety training courses?	Law on occupational safety and health as well as Decree 44/2016/NĐ-CP have related provisions. There

Questions from Participants	Answers of JICA Experts and C/P
	are 6 stakeholders obligated to join labor safety training courses, 3 of which are personnel at managing levels, safety officials, workers at the site. Ministry of Labors, Invalids and Social Affairs proposes training framework. However, as there are some contents inappropriate with the nature of construction field, Ministry of Construction is under discussion with other related organizations to issue suitable regulations.
How to calculate cost for environment protection for area surrounding construction works?	Cost for surrounding environment protection includes cost for environment issues generated from the construction works and to maintain normal environment condition. The employer should prepare specification and the contractors will estimate the cost, based on this specification. To protect surrounding environment, the employer in Viet Nam should include the cost in project cost in advance, then request contractors to follow.
Does MOC evaluate environment impact for whole life of the project?	MOC will consider your idea. But at present, MOC management only concentrates on environment during construction.

Source: Project team

### 7.3 Recommendations and Lessons Learned

As having worked in the CCQS Project as the Project team since April 2015 for three years and all activities in the Project Design Matrix (PDM) for Output 2 were complete, and the followings are the achievements in Output 2.

- ♦ C/Ps in MOC and various stakeholders well recognize issues in safety and environment management in construction works at certain level.
- ♦ Standard Plan for Safety and Environment Management in Construction Works (SPSEM) was compiled in joint efforts of C/Ps and JICA team based on the activities of Output 2 (activity 2-1, 2-2 & 2-4 in PDM) and submitted with the covering letter. Circular 04/2017/TT-BXD was issued in March 2017 taking the essence of the SPSM.
- ♦ Cost estimation on safety management was complete and agreed with the C/Ps in Output 2 and 3 and the data was incorporated in the GLCE (output document in Output 3).
- ♦ Guideline for Safety and Environmental Inspection in Construction Works for SAs and POs / PMUs (GLSEI) was compiled in joint efforts of C/Ps and JICA team based on the activities of Output 2 (activity 2-1 & 2-5 in PDM) and submitted with the covering letter.
- ♦ Training workshops were held in November and December 2016 at Hanoi, Da Nang and Ho Chi Minh City and in November and December 2017 at Hanoi, Da Nang, Can Tho and Ho Chi Minh City, in which the SPSEM and GLSEI, and related regulations (Circular 04/2017/TT-BXD etc.) were presented for disseminations. Future plan after CCQS Project, such as trainings in 2018 and incorporation of the SPSEM & GLSEI into regulations were also explained. After presentation, question and answer sessions were done quite actively between the participants and the Project team.
- ♦ SACQI of MOC has clear intentions to incorporate essence of the SPSEM and GLSEI into regulations.

In addition, the followings are issues experienced in the activities of Output 2.

- ♦ Discussions were carried out only within C/Ps (SACQI) and JICA team of Output 2, though the results of Output 2 were presented in the PCU and JSC meetings, and the presentations and discussions of the same were taken place in the dialogues with construction industries (VACC, VECAS and OCAJI) and the training workshops.



- ◆ Contents of Output 2 were explained to a few PMUs only undertaking domestic projects and ODA projects.
- ◆ MOC regulates for construction industry through establishment of laws, decrees and circulars, however rarely manages construction work itself as project owner. Therefore, the effect of Output 2 does not directly extend to PMUs controlled and supervised by other ministries and organizations and also to the contractors.
- ◆ Through the review in case study projects, it was confirmed that safety management was different between domestic projects and JICA ODA projects. Differences are not only differences in knowledge and experiences in safety management and environment management but also in cost estimation.

With the above achievement and issues, the following actions are expected and recommended to implement by SACQI of MOC with related organizations.

- ◆ MOC (AMC and SACQI) will implement trainings on output documents (SPSEM and GLSEI etc.) in the year 2018 onward for dissemination.
- ◆ When revising regulations incorporating the contents of the SPSEM and GLSEI, MOC recognizes that training program and materials shall be modified and upgraded so that purposes of trainings will be not only dissemination but also application of new regulations.
- ◆ SACQI will apply the SPSEM and GLSEI in the projects on trial basis.
- ◆ SACQI will utilize the GLSEI as SACQI's internal safety inspection procedures.
- ◆ Other department of MOC will incorporate contents of SPSEM and GLSEI into draft circular on environment protection in construction.
- ◆ MOC will legalize the contents in SPSEM and GLSEI at law, decree and circular level.

The roadmap for achievement in CCQS Project and future actions was prepared by the Project team (C/Ps and JICA team). The roadmap for future actions was presented by C/Ps and accepted in the Fifth JSC meeting in October 2017. It was explained again by C/Ps and re-confirmed in the Special meeting for explanation of draft Project Completion Report (PCR) in January 2018.

The roadmap for Output 2 is shown in the table below.

**Table 7-10 Roadmap for Output 2 in CCQS Project and Future Plan**

Items	2015	2016	2017	2018	2019	2020	2021	2022
<b>Output 2 in CCQS Project</b>	[Timeline bar from 2015 to 2018]							
1 Compilation of Output Documents								
- Standard Plan for Safety Management (SPSM)	[Bar 2015-2016]							
- Standard Plan for Safety and Environment Management (SPSEM)			[Bar 2017-2018]					
- Guideline for Safety and Environmental Inspection (GLSEI)			[Bar 2017-2018]					
2 Submission of Output Documents								
3 Training Workshop								
<b>MOC Plan to disseminate &amp; incorporate SPSEM &amp; GLSEI into Regulation</b>								
1 Dissemination of SPSEM & GLSEI to MOC and related Organizations								
2 Incorporation of SPSM into Circular 04/2017								
3 SPSEM & GLSEI to apply in the projects on trial basis								
4 GLSEI to be used as SACQI's Internal Inspection Procedures								
5 Technical Inputs for Incorporation into Regulation (Draft Circular on "Environment Protection in Construction")								
6 Incorporation into the Revision of Law on Construction & Occupational Safety and Health								

Source: Project team

Lessons learned from the experiences in CCQS Project are stated below for similar projects in future.

- ◆ In order to have general level of safety and environment management in Viet Nam, information on safety and environment management education and training programs in construction works

shall be collected from organizations for educations and trainings, such as institutions, universities, project owners, individual consultants and contractors.

- ♦ At the commencement, interested parties for safety and environment management in construction works are widely searched and discussions will be carried out with them in regular basis during implementation of project.

The SPSEM and GLSEI formulated in Output 2 and the calculated safety cost based on the SPSM enhanced C/Ps capacity in safety and environmental management in construction works.

In case that the SPSEM and GLSEI are used to be the guidance for making safety and environmental management plan required by the contractor and supervising / inspecting by state authorities and POs / PMUs under the contract, the Project team considers that the safety and environmental control at construction site in Viet Nam will be improved.

Subsequently, safety and environmental control of infrastructure projects in Viet Nam will approach to the international level.

## Chapter 8 Enhancement of Cost Estimation (Output 3)

### 8.1 Outline of Output 3

Policy Capacity for cost estimation methodology of construction contractor works is enhanced.

With comparative analysis between cost estimation system in Japan and Viet Nam, differences were clarified and insufficiency in indirect cost in system of Viet Nam was identified. Then, the appropriate international standard method of cost estimation is recommended in the form of Cost Estimation Guideline as the output documents of Output 3.

Output 3 activities in the Project Design Matrix (PDM) are the followings;

- 3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan
- 3-2. To formulate “Guideline on the cost estimation for indirect construction contractor works (GLCE- 1)”
- 3-3. To formulate “Guideline on the cost estimation for direct construction contractor works (GLCE- 2)”
- 3-4. To prepare draft circular for authorizing “Guideline on the cost estimation for construction contractor works (GLCE)”
- 3-5. To carry out trainings/seminars on the above GLCE for dissemination
- 3-6. To compile the training program and the seminar materials on the above GLCE

C/Ps requested to incorporate Activity of 3-3 above mentioned into the Project since October 2016 as an additional activity. The indirect cost is calculated based on the value of direct cost with rate; therefore, those are closely related. Thus, the study of direct cost had been added.

First, as a review work, cost components in direct cost and indirect cost regulated in the circulars in Viet Nam are broken down into detail for comparison analysis and differences, insufficiency and uncertainty in Vietnamese system are analyzed with the counterparts (C/Ps). Based on this study, standard cost estimation system for Viet Nam is recommended.

New circular regarding cost estimation is drafted basing on the results of above study and submitted to MOC for formulation by C/Ps. After completion of Cost Estimation Guideline and new circular, training and seminar for government staffs concerned are implemented by MOC staffs. Government staffs in charge of cost estimation review and study the new system and it is, as a result, disseminated nationwide finally.

### 8.2 Activities

#### 8.2.1 Review of Current Cost Estimation System

- (1) Current Regulations with regard to Cost Estimation in Viet Nam

Current regulations stipulating the matters regarding Cost Estimation in Viet Nam are shown in Table 8-1 below.

**Table 8-1 Current Regulations regarding Cost Estimation in Viet Nam**

Sign	Category	Subjects	Summarization
50/2014/QH13	Law	Law No. 50/2014/QH13 dated June 18, 2014 on the construction	<p><b>Governing Scope</b> This Law regulates rights, obligations, and responsibilities of agencies, entities, individuals, and state management agencies in construction investment activities.</p> <p><b>Applicable entities</b> This Law applies to Vietnamese entities and individuals</p>

Sign	Category	Subjects	Summarization
			<p>as well as foreign entities and individuals operating in construction investment in the Vietnamese territory. In case where an international treaty in which the Socialist Republic of Viet Nam is a member contains provisions different from those of this Law, the provisions of such international treaty will be applied.</p>
43/2013/QH13	Law	Law No. 43/2013/QH13 dated November 26,2013 on Bidding	<p><b>Governing Scope</b>  This Law provides for state management on bidding; responsibilities of concerned parties and activities of bidding, including:</p> <ol style="list-style-type: none"> <li>1. Selection of tenderers to supply the advisory services, non-advisory services, goods, construction and installation for: <ol style="list-style-type: none"> <li>a) Projects on development investment financed by state of state agencies, political organizations, socio-political organizations, professional-socio-political organizations, socio-professional organizations, social organizations, units of People’s armed forces, and public non-business units;</li> <li>b) Projects on development investment of state-owned enterprises;</li> <li>c) Projects on development investment other than cases defined at point a and point b of this Clause which are financed by state, state-owned enterprises with level equal to 30% or more or less than 30% but more than 500 billion VND in total invested capital of project.</li> <li>d) Procurement financed by state aiming to maintain regular activities of State bodies, political organizations, socio-political organizations, socio-political-occupational organizations, social organizations, socio-occupational organizations and units of the People’s armed forces, and public non-business units;</li> <li>dd) Procurement financed by state aiming to supply products and services in serve of public purpose;</li> <li>e) Purchase of national reserve goods financed by state;</li> <li>g) Purchase of drugs, medical supplies financed state; medical insurance fund, revenues from services of medical examination and treatment and other lawful revenues of public medical establishments;</li> </ol> </li> <li>2. Selection of tenderers to supply the advisory services, non-advisory services, goods on Viet Nam’s territory for implementation of overseas direct-investment projects of Vietnamese enterprises which are financed by state with level equal to 30% or more or less than 30% but more than 500 billion VND in total invested capital of project.</li> <li>3. Selection of investors to perform the investment projects in form of public-private partnership (PPP), investment projects with land use;</li> <li>4. Selection of tenderers in petroleum field, except for selection of tenderers to supply petroleum services related directly to activities of search, exploration and development of mines and petroleum exploitation as prescribed by law on petroleum.</li> </ol> <p><b>Applicable entities</b></p> <ol style="list-style-type: none"> <li>1. Organizations and individuals that participate in or related to activities of bidding defined in Article 1 of this Law.</li> </ol>

Sign	Category	Subjects	Summarization
			<p>2. Organizations and individuals that have activities of bidding not within the governing scope of this Law may choose to apply this Law. In case of choosing to apply, organizations and individuals must observe the concerned provisions of this law and ensure fairness, transparency and economic efficiency.</p> <p><b>Application of Law on bidding, International treaties and international agreements</b></p> <p>1. Bidding activities must comply with the provisions of this Law and other related laws.</p> <p>2. Case of selecting by bidding for provision of raw materials, fuel, materials, supplies, advisory services, non-advisory services in order to ensure the continuity for production and business and procurement with the aim to maintain regular activities of state-owned enterprises; implementation of bidding packages of investment projects in the form of public-private partnership, investment projects with land use of the selected investors, enterprises must promulgate regulations on choosing tenderers for unified application in enterprises on the basis of ensuring objective of fairness, transparency, and economic efficiency.</p> <p>3. For selection of tenderers, investors of projects financed by official development assistance (ODA) capital, concessional loans arising from International treaties, international agreements between Viet Nam and donors, international treaties, international agreements shall be applied.</p> <p>4. If International treaties to which the Socialist Republic of Viet Nam is a contracting party have provisions on selection of tenderers and investors different from this Law, such International treaties shall prevail.</p>
32/2015/ND-CP	Decree	Decree No. 32/2015/ND-CP dated March 25, 2015, construction cost management	<p><b>Governing Scope</b></p> <p>1. This Decree deals with management of construction costs including total construction investment, construction estimate, construction contract estimate, construction norms, construction prices, construction price indexes, project management and construction consultancy cost, payment for and finalization of construction contracts; reimbursement and statement of construction capital; rights and obligations of investment deciders, investors, building contractors, advisory contracts for construction cost management.</p> <p>2. With regard to construction projects funded by official development assistance (ODA), if an international agreement to which Socialist Republic of Viet Nam is a signatory is in contravention of this Decree, regulations of such international agreement shall apply.</p> <p><b>Applicable entities</b></p> <p>1. This Decree applies to every organization and individual (hereinafter referred to as entity) related to construction cost management of projects funded by state budget and external-source state capital prescribed in Clause 1 and Clause 2 Article 60 of the Law on Construction.</p> <p>2. Regulations of this Decree may be applied to management of construction costs of projects funded by other sources.</p>

Sign	Category	Subjects	Summarization
37/2015/ND-CP	Decree	Decree No. 37/2015/ND-CP dated April 22, 2015, detailed regulations on construction contract	<p><b>Governing Scope and Applicable entities</b></p> <p>1. This Decree provides detailed regulations on construction contract</p> <p>2. This Decree applies to organizations, individuals concerning formulation and management of the performance of construction contract for construction projects (including construction contract between investors in BOT, BTO, BT and PPP projects and contractors for project packages) as follows:</p> <p>a) Construction projects by regulatory agencies, political organizations, socio-political organizations, political-social-occupational organizations, socio-occupational organizations, social organizations and units affiliated to People's armed forces and public service providers;</p> <p>b) Construction projects by state-owned enterprises;</p> <p>c) Construction projects that are not defined in Points a, b of this Clause but use state capital, corporate capital from 30% and over or from under 30% to over VND 500 billion of total project investment capital; Relevant organizations, individuals using other capital sources are encouraged to apply provisions set out hereof.</p> <p>3. As for construction contract for ODA projects, provisions set out in the International Agreement to which Viet Nam is a signatory shall be exercised in case they are different from provisions set out hereof.</p>
46/2015/ND-CP	Decree	Decree No. 46/2015/ND-CP dated May 12, 2015, on quality control and maintenance of construction works	<p><b>Governing Scope</b></p> <p>This Decree provides guidance on the Law on Construction in terms of the construction work quality control in the inspection, design and construction activities and in terms of maintenance of construction works and resolution of construction work incidents arising during the construction.</p> <p><b>Applicable entities</b></p> <p>This Decree applies to the investment deciding authorities, the investors, owners, managers and users of the works, domestic contractors, foreign contractors, regulatory bodies in terms of construction and organizations and individuals relating to the quality control and maintenance of construction works.</p>
59/2015/ND-CP	Decree	Decree No. 59/2015/ND-CP dated June 18, 2015, on construction project management	<p><b>Governing Scope</b></p> <p>This Decree provides guidance on construction project management (hereinafter referred to as CPM) as prescribed in the Law on construction dated 2014, including: formulation, appraisal, approval for projects; execution of projects; and completion and inauguration of the project; forms and contents of CPM. Projects funded by official development assistance (ODA) and concessional loans granted by foreign donors shall comply with this Decree and regulations on management and use of ODA and concessional loans granted by foreign donors.</p> <p><b>Applicable entities</b></p> <p>This Decree applies to every domestic agencies, organizations, and individuals; foreign organizations and individuals carrying out construction investment within Viet Nam's territory.</p>
06/2016/TT-BXD	Circular	Circular No. 06/2016/TT-BXD	<p><b>Governing Scope</b></p> <p>This Circular provides detailed instructions on contents,</p>

Sign	Category	Subjects	Summarization
		dated March 10, 2016, guiding the determination and management of construction investment costs	method of determination and management of construction investment costs including the preliminary total construction investment, construction estimate, construction package estimate, construction norm, works construction price, construction price index, machine shift price and constructional equipment. <b>Applicable entities</b> 1. The agencies, organizations and individuals pertaining to the determination and management of construction investment costs of construction investment projects using the capital from the state budget or the off-budget state capital in accordance with the provisions in Clause 1, Article 2 of Decree No. 32/2015/ND-CP dated 25/3/2015 of the Government on management of construction investment costs (referred to as Decree No. 32/2015/ND-CP) and construction investment projects in the form of public-private partnership (PPP). 2. The construction investment projects using other capital are encouraged to apply the provisions of this Circular.
05/2016/TT-BXD	Circular	Circular No. 05/2016/TT-BXD dated March 10, 2016, providing guidance on determination of the unit labor cost in the construction cost management	<b>Governing Scope</b> This Circular shall provide the guidance on determination of the unit labor cost in the construction cost management, including: total investment, construction cost estimate, contract estimate, construction price, contract price and construction price index. <b>Applicable entities</b> 1. Agencies, organizations and individuals related to the management of the construction cost of investment and construction projects using state budget funds or non-budget state funds, and investment projects under the form of public-private partnership (PPP) shall be governed under the provisions of this Circular. 2. Agencies, organizations and individuals related to the management of the construction cost of projects funded by other capital sources are encouraged to implement this Circular.
1134/QD-BXD	Decision - Norm	Decision No. 1134/QD-BXD dated October 08, 2015, on promulgation of the consumption norm for determining construction machines and equipment shift prices	1134/QD-BXD: The consumption norm for determining construction machinery shift The consumption norm for determining the machine shift price consist of: the number of working shifts per year, the norm of depreciation, repair and consumption of fuel – power, operator and the norm of other costs. The consumption norm for determining the machine shift prices promulgated is the basis to refer and use for determining the machine shift prices according to the Guidance of MOC on the determination and management of construction investment cost.
1776 /BXD-VP	Notifications - Norm	Notification No. 1776 /BXD-VP issued on 16/8/2007 of Ministry of Construction promulgating the construction estimation norm - Construction portion	1776/BXD-VP: The construction estimation norm – Construction portion The construction cost estimation norm – Construction portion is the technical-economic norm showing the consumption rate on materials, labors and construction machines to complete one unit of quantity of construction task like 1m <sup>3</sup> of brick walls, 1m <sup>3</sup> of concrete, 1m <sup>2</sup> of tiles, 1 ton of steel bars, 100m of piles, etc.... from the preparation stage until finalizing the task (including the necessary waste required by the specification and organization of execution) so as to ensure the

Sign	Category	Subjects	Summarization
			continuousness, compliance with technical process and code, of work execution. This norm was formulated based on the Regulations, Standards on Construction; technical codes on design – construction – acceptance; general level of mechanizing in construction sector; equipment, construction method and technical-scientific progress in construction (new materials, advanced equipment and technology, etc....).
1091/QD-BXD	Decision - Norm	Decision No. 1091/QD-BXD dated December 26, 2011, on promulgation of the construction estimation norm - Construction portion (Amendment)	This Decision promulgates a number of construction norms enclosed with this decision to be added to the construction estimation norm - Construction portion as promulgated according to the Notification No. 1776/BXD-VP issued on 16/8/2007 of Ministry for the references and use of related agencies, organizations and individuals in the determination and management of construction investment cost.
1172/QD-BXD	Decision - Norm	Decision No. 1172/QD-BXD dated December 26, 2012, on promulgation of the construction estimation norm - Construction portion (Adjustment and amendment)	This Decision promulgates a number of construction norms enclosed with this decision to be added to the construction estimation norm - Construction portion as promulgated according to the Notification No. 1776/BXD-VP issued on 16/8/2007 of Ministry for the references and use of related agencies, organizations and individuals in the determination and management of construction investment cost.
588/QD-BXD	Decision - Norm	Decision No. 588/QD-BXD dated May 29, 2014, on promulgation of the construction estimation norm - Construction portion (Adjustment and amendment)	This Decision promulgates a number of construction norms enclosed with this decision to be added to the construction estimation norm - Construction portion as promulgated according to the Notification No. 1776/BXD-VP issued on 16/8/2007 of Ministry for the references and use of related agencies, organizations and individuals in the determination and management of construction investment cost.
235/QD-BXD	Decision - Norm	Decision No. 235/QD-BXD dated April 4, 2017, on promulgation of the construction estimation norm - Construction portion (Adjustment and amendment)	This Decision promulgates a number of construction norms enclosed with this decision to be added to the construction estimation norm - Construction portion as promulgated according to the Notification No. 1776/BXD-VP issued on 16/8/2007 of Ministry for the references and use of related agencies, organizations and individuals in the determination and management of construction investment cost.
1329/QD-BXD	Decision - Norm	Decision No. 1329/QD-BXD dated December 19, 2016, on promulgation of the norm for using material in construction	1329/QD-BXD: The norm for using material in construction The norm for using material in construction is the technical-economic norm showing the consumption rate on each materials to constitute one unit of quantity of construction task (such as 1m <sup>3</sup> of brick walls, 1m <sup>2</sup> of tiles, etc....) or one kind of components or construction structures (such as 1 set of truss, 1 support structure for pit, etc....) in accordance with technical requirement, design and construction. This norm was formulated based on the Regulations, Standards on Construction; technical codes on design – construction – acceptance and the results of the application of technical-scientific progress, construction technology, building materials technology.

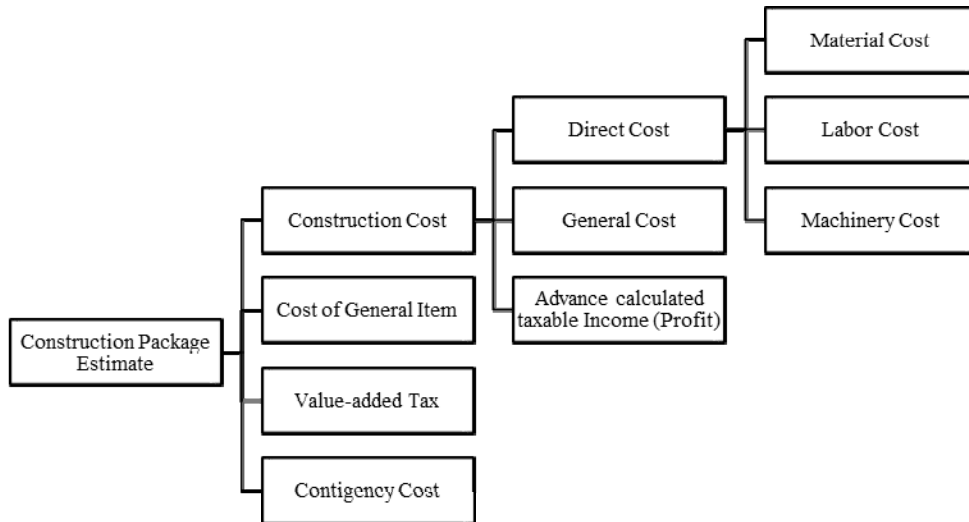
Source: Vietnamese Regulations, Project team



(2) Current Structure of Cost Estimation in Viet Nam and Japan

1) Cost structure of Construction Package in Viet Nam

According to Circular 06\_2016\_TT-BXD, the Cost Structure of Construction Package in Viet Nam is shown in Figure 8-1 below.

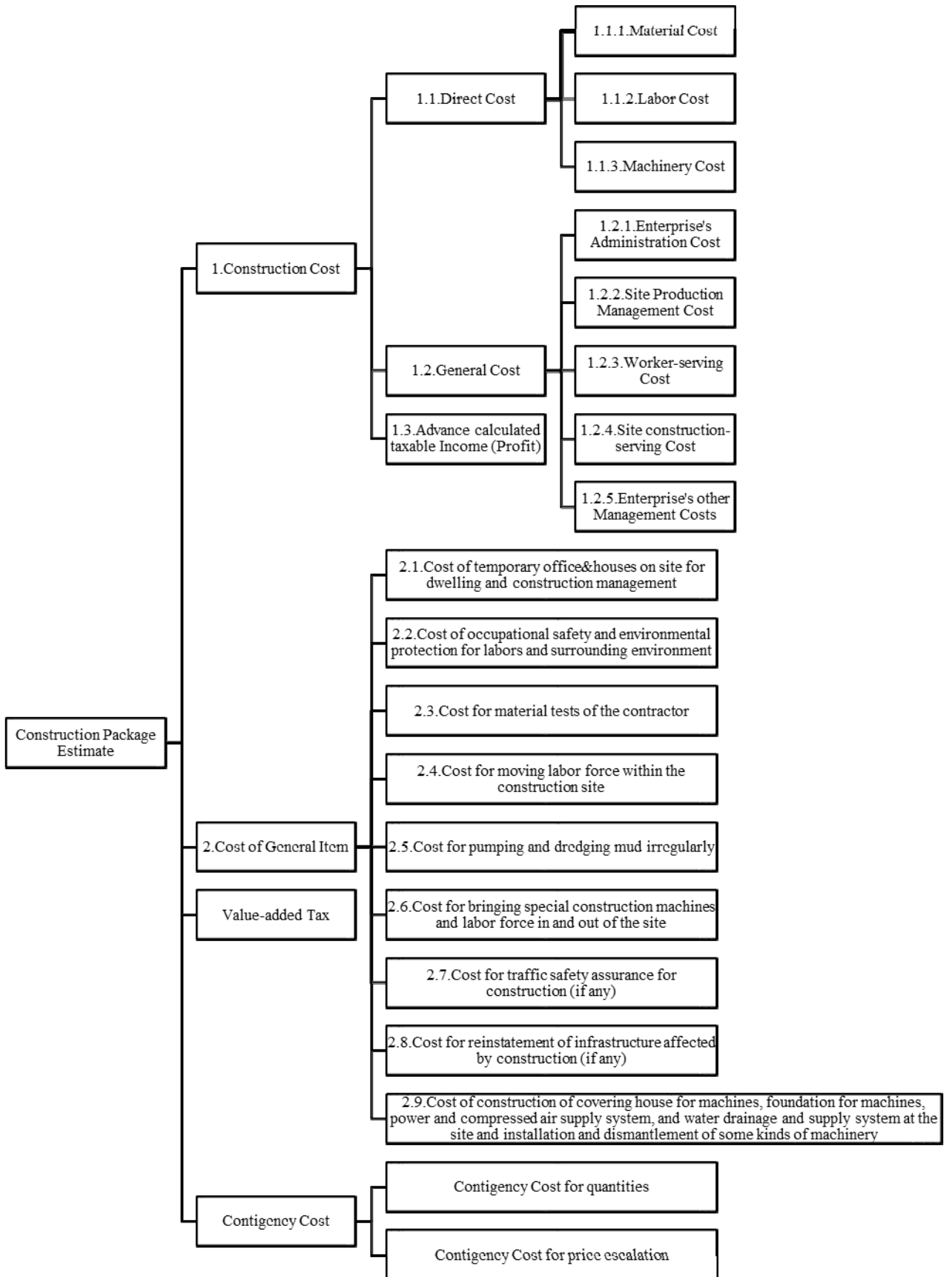


Source: Circular 06\_2016\_TT-BXD

**Figure 8-1 Cost Structure of Construction Package in Viet Nam**

Cost of construction package estimate (total price of construction package) is composed of 4 large items, which are Construction Cost (main cost), Cost of General Item, VAT (Value Added Tax) and Contingency Cost. This structure is applied to all construction projects that Viet Nam government carries out, including not only infrastructure and architectural works, but also industrial, agricultural, communicational works and so forth.

Each cost item is further subdivided into detailed items according to Circular 06\_2016\_TT-BXD. The detailed cost structure of construction package is shown in Figure 8-2.



Source: Circular 06\_2016\_TT-BXD

**Figure 8-2 Detailed Cost Structure of Construction Package in Viet Nam**

The features of each cost items in the structure of Viet Nam are as follows.

A) Construction Package Estimate:

Construction Package Estimate is the total costs necessary for construction implementation of building tasks, work items, and construction works in accordance with the scope of the construction package. Contents of the construction package estimate consist of construction cost, cost of general item, VAT and contingency cost.

B) Construction Cost:

Construction cost is inclusive of direct cost, general cost, advanced calculated taxable income.

C) Cost of General Item:

Cost of general item is inclusive of Cost of temporary office & houses on site for dwelling and construction management; Cost of occupational safety and environmental protection for labors and surrounding environment; Cost for material tests of the contractor; Cost for moving labor force within the construction site; Cost for pumping and dredging mud irregularly; Cost for bringing special construction machines and labor force (who have skills under the enterprise' management and have long-term labor contracts with the enterprise) in and out of the site; Cost for traffic safety assurance for construction (if any); Cost for reinstatement of infrastructure affected by construction (if any); Cost of construction of covering house for machines, foundation for machines, power and compressed air supply system, and water drainage and supply system at the site and installation and dismantlement of some kinds of machinery (such as concrete batching plant, asphalt concrete batching plant, rail-crane, tower crane, some other machines have the similar properties).

D) Contingency Cost:

Contingency cost is inclusive of contingency cost for arising construction quantities and contingency cost for price escalation during construction implementation.

E) Direct Cost:

Direct cost is inclusive of material cost (including the materials provided by the PO), labor cost, and construction machinery cost and determined for works, work items, auxiliary works, and temporary works serving the construction.

F) General Cost:

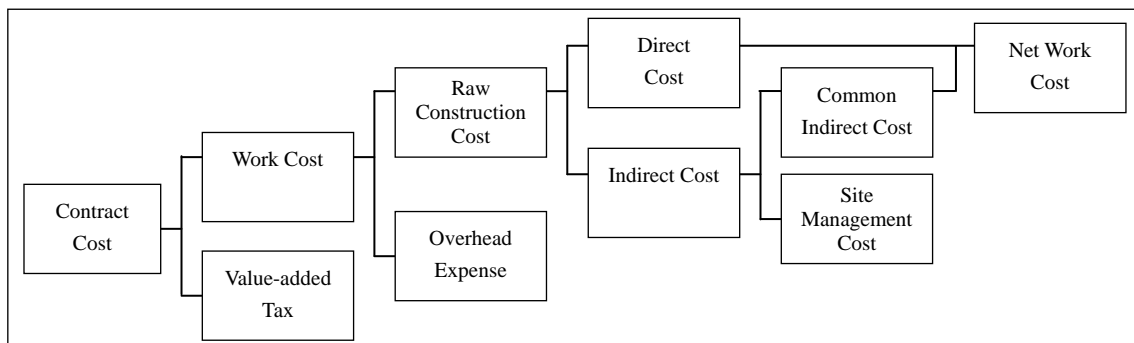
General cost is inclusive of enterprise's administration cost, site production management cost at the construction site, worker-serving cost, site construction-serving cost, and enterprise's other management costs.

G) Advance calculated taxable Income:

Advance calculated taxable Income is the profit for the construction enterprise which is estimated in advance in the construction work estimate.

2) Cost structure of public construction projects in Japan

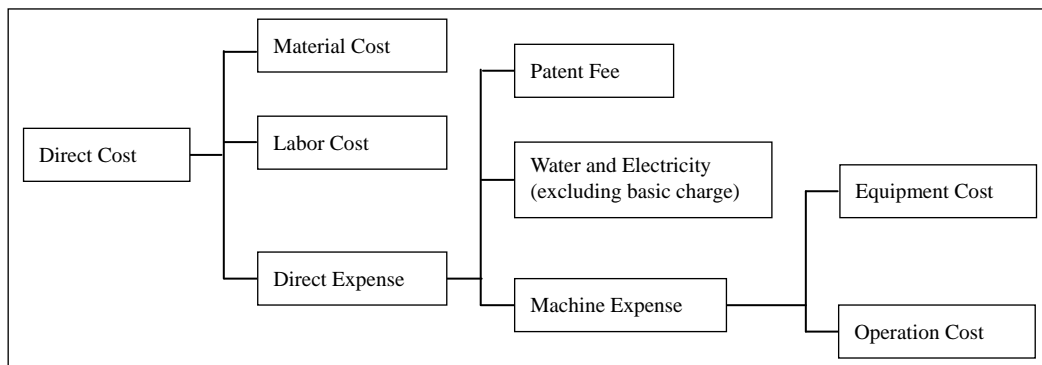
Cost structure of public construction projects in Japan is shown in Figure 8-3.



Source: Ministry of Land, Infrastructure, Transport and Tourism (Japan) (MLIT)

**Figure 8-3 Cost Structure of Public Construction Project in Japan**

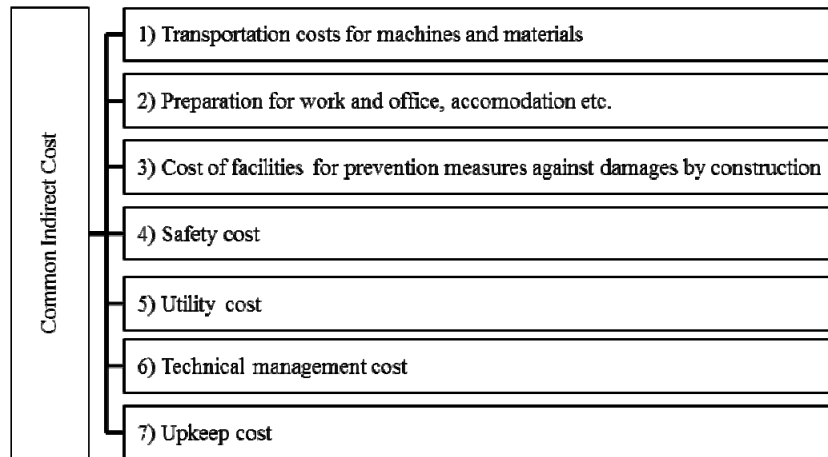
- A) Contract Cost  
This cost is total cost of Work Cost and VAT and necessary cost of contractor who executes the project.
- B) Work Cost  
Work Cost is total cost of Raw Construction Cost and Overhead Expense and becomes Target Cost for bidding.
- C) Raw Construction Cost  
This Cost is total of Direct Cost and Indirect Cost and total net amount that is necessary for completion of the construction project.
- D) Overhead Expense  
In private contractors, management cannot be satisfied by only raw construction cost as the companies for the purpose of profit. They need money for management of company such as personnel expenses of the owner, executives and administrative staffs, office fee, utility cost, insurance and tax so forth. Those cost not related to main works are called Overhead expense.
- E) Direct Cost  
Direct Cost is the cost that is used only for purely creating the construction object. This cost is composed of 3 main elements such as material, labor and direct expense. The structure of Direct Cost is shown in Figure 8-4.



Source: MLIT

**Figure 8-4 Structure of Direct Cost in Japan**

- F) Indirect Cost  
Indirect construction costs include Common Indirect Costs and Site Management Cost. Common indirect cost includes costs of other items that are not dealt in direct construction costs, and some miscellaneous items calculated by piling up and rate. Quality control and safety management cost are also accumulated in this cost. Common indirect cost is divided into the two categories that are stacked individually and are calculated by common temporary expense ratio.
- G) Common Indirect Cost  
Common Indirect Cost is the cost for setup and preparation works for main construction works. These works are mostly temporary and removed after completion of main structures. The cost includes costs of setup and removal on these works. The component of Common Indirect Cost is as follows.

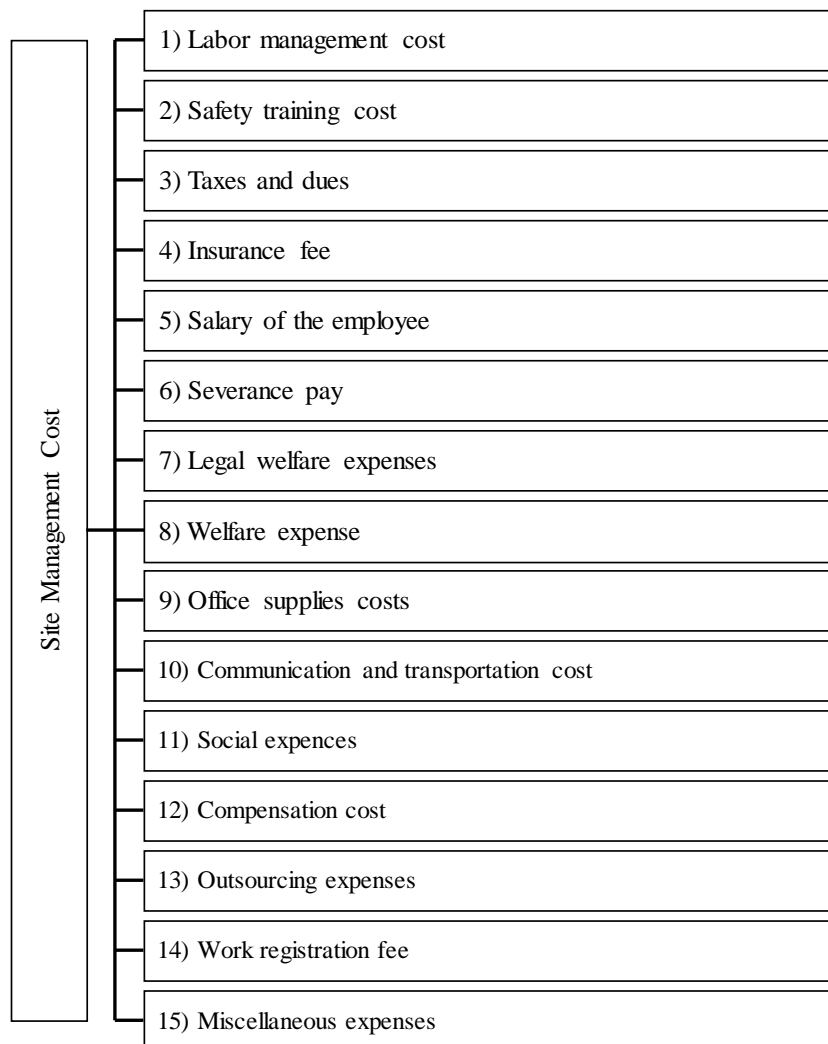


Source: MLIT

**Figure 8-5 Elements of Common Indirect Cost**

H) Site Management Cost

Site Management Cost is the cost for management of construction works and construction site. This cost is composed of the following elements.



Source: MLIT

**Figure 8-6 Elements of Site Management Cost**

(3) Contents and Rate of Indirect Cost

Cost items included in each cost categories such as Direct Cost, Indirect Cost, Overhead Cost in Viet Nam and Japan were clarified and sorted based on the Japanese classification to make clear the differences in Table 8-2, 8-3, 8-4. According to this comparison table, there were some differences identified even in same categories between two countries. Analysis is based on the Japanese categories; herewith blank boxes in Vietnamese column indicate that items existing in Japan are missing in Viet Nam.

**Table 8-2 Cost Items Included in Direct Cost in Viet Nam and Japan**

Direct Cost Items		
Direct Cost Items in Japan	Direct Cost Items in Viet Nam	Remark
1) Material Cost (Exclusive regarding the machinery cost)	Cost of materials	JP, VN: Including temporary works and support works serving construction.
2) Labor Cost (Exclusive regarding the machinery cost)	Labor cost	JP, VN: Including temporary works and support works serving construction.
3) Direct Expenses		
3)-1 Rental fee of patent		
3)-2 Utility Cost (water supply, electricity and etc.) exclusive basic charge		For site office, accommodations and construction (other than materials for machines) in Japan, it can be under 1.2.2 Site Production Management Cost in Viet Nam (11) Electricity and water
3)-3 Machinery Cost	Cost of construction machines	JP, VN: Including temporary works and support works serving construction.
3)-3-1 Machinery ownership cost	3)-3-2 Operation cost	Including depreciation cost, repair cost, cost of fuel and power, operator cost, and other costs (insurance, storage, registration, moving within the site, other costs related to management and use of machinery on the site)
a) Periodic maintenance cost	a) Material cost (Operation)	
b) Repair cost at site	b) Labor cost (Operation)	
c) Depreciation cost		
d) Machinery management cost		

Source: Project team

**Table 8-3 Cost Items Included in Indirect Cost in Viet Nam and Japan**

Indirect Cost Items			
Indirect Cost Items In Japan		Indirect Cost Items in Viet Nam	Remark
Contents by piling up	Contents by rate calculation		
<b>➤ Common Indirect Cost Items In Japan</b>			
<b>1) Transportation Costs for Machines and Materials</b>			
(1) Transportation fee by truck for construction machine over 20t.	(1) Fee of bringing construction machines less than 20t in and out of the site and transportation within the site including decomposition and assembly.	2.6 Cost for bringing special construction machines and labor force in and out of the site (1) Costs for moving the heavy, special construction equipment, machines in and out of the site. 2.9 Cost of construction	Cost for moving of machines with in the site in Japan is under the Direct cost in Viet Nam

Indirect Cost Items			
Indirect Cost Items In Japan		Indirect Cost Items in Viet Nam	Remark
Contents by piling up	Contents by rate calculation		
		of covering house for machines, foundation for machines, power and compressed air supply system, and water drainage and supply system at the site and installation and dismantlement of some kinds of machinery (such as concrete batching plant, asphalt concrete batching plant, rail-crane, tower crane, some other machines have the similar properties).	
(2) Transportation fee of impermanent materials (steel sheet-pile, H-type steel, lining steel plate, laying steel plate, etc.).	(2) Costs for bringing in and out of the site and transportation within the site of various materials such as frame, supporting materials, scaffold materials, bent for bridges, tower for bridge erection, facilities for bridge erection girder, tremie pipe, sliding center of tunnel, etc.		(2) Costs for bringing in the site of various materials, scaffold materials, bent for bridges, tower for bridge erection, facilities for bridge erection girder, tremie pipe, sliding center of tunnel, etc. and (2) impermanent materials (steel sheet-pile, H-type steel, lining steel plate, laying steel plate, etc.) in Japan is under Direct cost in Viet Nam
(3) Cost for decomposition, assembly and transportation of heavy construction machines (Except truck crane <hydraulic telescopic crane with jib and capacity of hanging 20t to 50t> and rough terrain crane <hydraulic telescopic crane with jib and capacity of hanging 20t to 70t>.	(3) Transportation fee of construction machinery by self-propelled (truck crane with lattice jib and capacity of hanging 25t and hydraulic telescopic crane with jib and capacity of hanging more than 80t must be calculated by piling up.		
(4) Rent fee during decomposition and assembly, and transportation of rent application truck crane <hydraulic telescopic crane with jib and capacity of hanging more than 80t> and crawler crane <hydraulically driven crane with winch lattice jib and capacity of	(4) Cost of daily forwarding (including decomposition, assembly and transportation) construction machines (including heavy ones)		

Indirect Cost Items			
Indirect Cost Items In Japan		Indirect Cost Items in Viet Nam	Remark
Contents by piling up	Contents by rate calculation		
hanging more than 35t>.			
(5) Rent fee during transportation of rent application machines weighing more than 20t besides above described.	(5) Cost of small transport in the site of construction machines weighing more than 20t (but, piling up is acceptable in the case of decomposition and assemblies are inevitable due to special site condition.)		
	(6) In decomposition, assembly and transportation of heavy construction machines, hydraulic telescopic crane with jib and capacity of hanging 20t to 50t and rough terrain crane hydraulic telescopic crane with jib and capacity of hanging 20t to 70t are included.		
<b>2) Preparation for Work and Office, Accommodation etc.</b>			
(1) Special necessary preparatory work for beginning the construction project	(1) Cost for preparation and clean-up a) Cost of preparation work for commencement b) Daily preparation and clean-up work c) Final clean-up of the work	2.5 Cost for pumping and dredging mud irregularly	
(2) Cost of transportation and disposition of construction waste out of the site produced by clearing and grubbing of the site	(2) Cost for general survey, ground survey, finishing stake and so forth a) Basic ground survey before work b) Collation of design drawing c) Piles set for the construction zone d) Cost of setting of finishing stake	1.2.4 Site construction-serving Cost (1) Survey at site serving construction	(2) Cost of transportation and disposition of construction waste out of the site produced by clearing and grubbing of the site in Japan is under Direct Cost in Viet Nam
(3) Cost of traffic guard persons necessary for preparation works can be included in construction safety cost.	(3) Cost of accumulation, and stowage after clearing, grubbing, and weeding and ground leveling, stage cutting and smoothing etc.		(3) Cost of accumulation, and stowage after clearing, grubbing, and weeding and ground leveling, stage cutting and smoothing etc.... in Japan is under Direct Cost in Viet Nam
<b>3) Cost of Facilities for Prevention Measures against Damages by Construction</b>			
(1) Cost of setting and removing, and maintenance of temporary		2.2 Cost of occupational safety and environmental protection for labors and	(1) Cost of setting and removing, and maintenance of temporary



Indirect Cost Items			
Indirect Cost Items In Japan		Indirect Cost Items in Viet Nam	Remark
Contents by piling up	Contents by rate calculation		
facilities that prevent damages and loss by construction such as noise, vibration, settlement, loss of underground water.		surrounding environment (1) Costs for the facilities and method against dust, noise, vibration, settlement of ground, vanishing of underground water due to execution of construction work, cleaning the sanitation of the site and surrounding area.	facilities that prevent damages and loss by construction such as noise, vibration, settlement, loss of underground water in Japan can be under Direct Cost in Viet Nam
(2) Cost of survey for measures against damages and losses by construction.			
<b>4) Safety Cost</b>			
(1) Cost of traffic management such as transportation inductors and machine inductors.	(1) Cost of monitoring and correspondence for safety management in the whole construction site.	2.7 Cost for traffic safety assurance for construction	
(2) Cost of safety managers at the entrance and exit of construction site neighboring facilities related to railway and airport.	(2) Cost of security staffs on off days.		
(3) Cost necessary for prevention of high voltage work.	(3) Cost of setting, removing and maintenance of safety facilities such as mark plate, sign, safety lighting, guard fence, barricade, fall prevention net, sign of construction, and lighting.	2.2 Cost of occupational safety and environmental protection for labors and surrounding environment (2) Safety facilities such as warning sign, warning light, light in dark time, fence against enter, temporary guardrail, safety scaffold and safety net	
(4) Cost of safety signs and guard boat in the case of the site adjacent ship routes.	(4) Cost of lighting in the case of works necessary lighting such as night work and so on (besides works necessary large-scale lighting such as dam and tunnel).		
(5) Cost of monitoring for blasting of rock excavation in dam construction.	(5) Cost of lifeboat in river and coastal construction.		
(6) Respiratory protective equipment for tunnel works.	(6) Cost of fire safety measures in long tunnel.		
(7) Others (in the case of necessary due to site conditions).	(7) Cost of prevention measures against anoxia.		
	(8) Cost of dust work preventive measures.		(8) Cost of dust work preventive measures in Japan are can be under 2.2

<b>Indirect Cost Items</b>			
<b>Indirect Cost Items In Japan</b>		<b>Indirect Cost Items in Viet Nam</b>	<b>Remark</b>
Contents by piling up	Contents by rate calculation		
			Cost of occupational safety and environmental protection for labors and surrounding environment in Viet Nam
	(9) Cost of safety supplies (such as helmets, safety shoes, gloves and clothes)	1.2.2 Site Production Management Cost (1) Protective goods (such as helmets, safety shoes, gloves and etc.)	
	(10) Cost of conferences, meetings on safety.		
<b>5) Utility Cost</b>			
(1) Land lease cost.			
(2) Basic charge of electricity and water for construction.			(2) Basic charge of electricity and water for construction. It can be under 1.2.2 the Site Production Management Cost or 1.2.4 Site construction-serving Cost in Viet Nam
(3) Charge fee for construction for electric power facilities.			(3) Charge fee for construction for electric power facilities in Japan can be under Direct Cost or 1.2.4 Site construction-serving Cost in Viet Nam
<b>6) Technical Management Cost</b>			
(1) Cost of special quality control a) Tests besides those are regulated in quality control standard b) In-situ tests such as geological survey, plate bearing test, boring, sounding	(1) Cost of items described quality control standard.	2.3 Cost for material tests of the contractor (1) Costs for all of required tests of materials (such as sand, soil, aggregate, steel bar, cable, concrete, cement, etc...) according to regulations	
(2) Cost of special cases due to site conditions a) Setting and removing of test equipment, measurements, and data reduction for soft ground research b) Cost of works for test embankment c) Cost of measurement type B for Tunnel work (NATM method)	(2) Cost of survey, drawings, picture for inspection of completion.	1.2.4 Site construction-serving Cost (1) Survey at site serving completion measurement	
(3) Cost of surveys for execution rationalization, construction methods trend, and overhead trend.	(3) Cost of survey for work schedule management.		(3) Cost of survey for work schedule management in Japan can be under 1.2.2 the Site

<b>Indirect Cost Items</b>			
<b>Indirect Cost Items In Japan</b>		<b>Indirect Cost Items in Viet Nam</b>	<b>Remark</b>
Contents by piling up	Contents by rate calculation		
			Production Management Cost in Viet Nam
(4) Others not included above items.	(4) As build, and soft data of all materials related to construction information.		(4) As build, and soft data of all materials related to construction information in Japan can be under 1.2.2 the Site Production Management Cost in Viet Nam
	(5) Cost for storage of quality record of all construction materials.		(5) Cost for storage of quality record of all construction materials in Japan can be under 1.2.2 the Site Production Management Cost in Viet Nam
	(6) Cost of tests of concrete unit water content, crack survey and concrete strength by test hammer.		
	(7) Cost of tension control for PC superstructure and anchor work and grouting mixture test.		
	(8) Cost of measurement type A for Tunnel work (NATM method).		
	(9) Cost for control of paint thickness.		
	(10) Cost of radiographic test of welding test.		
	(11) Cost of office automation equipment for work execution management.		
	(12) Cost of certificate of quality for various construction materials.		
<b>7) Upkeep Cost</b>			
(1) Cost of setting, removing, and maintenance for supervisory staff office and gunpowder depot Regarding those two facilities, they are piled up based on construction duration, site, time, scale, supervising system.	(1) Cost of setting, removing, and maintenance of site office and laboratory.	2.1 Cost of temporary office & houses on site for dwelling and construction management (1) Installation, removal, and maintenance of temporary office & houses on site for dwelling and construction management.	
(2) Others (in the case of necessary due to site conditions).	(2) Cost of setting, removing, and maintenance of workers lodging.		
	(3) Cost of setting, removing, and		

Indirect Cost Items			
Indirect Cost Items In Japan		Indirect Cost Items in Viet Nam	Remark
Contents by piling up	Contents by rate calculation		
	maintenance of depot and material depository.		
	(4) Cost of mobilization of workers.	2.6 Cost for bringing special construction machines and labor force in and out of the site (2) Costs for moving workers who have skills under the enterprise' management and have long-term labor contracts with the enterprise in and out of the site. 2.4 Cost for moving labor force within the construction site (1) Costs for moving workers within the site in the case of the distance of moving more than 30m	
	(5) Land and house lease fees of above (1)(2)(3)		
	(6) Cost of setting, removing, and maintenance for supervisory staff office and gunpowder depot in concrete dam and fill dam project.		

Indirect Cost Items			
➤ <u>Site Management Cost in Japan</u>	Site Production Management Cost in Viet Nam	Remarks	
<b>(1) Labor Management Cost</b>			
a) Recruitment and dissolution cost			
b) Entertainment and welfare for workers	1.2.2 Site Production Management Cost (2) Entertainment and welfare for workers		
c) Work clothes and work tools	1.2.2 Site Production Management Cost (3) Protective clothes and simple work tools for workers		
d) Meal and commuting costs	1.2.3 Worker-serving Cost (1) Drinking water		
e) Other insurance besides compulsory Industrial Injury Insurance			
<b>(2) Safety Training Cost</b>			
a) Training and study of labor safety and sanitary for site workers	2.2 Cost of occupational safety and environmental protection for labors and surrounding environment (3) Safety training for workers		
<b>(3) Taxes and Dues</b>		JP: Land tax, vehicles tax	

<b>Indirect Cost Items</b>		
<b>➤ Site Management Cost in Japan</b>	<b>Site Production Management Cost in Viet Nam</b>	<b>Remarks</b>
<b>(4) Insurance Fee</b>		
Car insurance		Car insurance in Japan can be under 1.2.2 Site Production Management Cost in Viet Nam
Work insurance		VN: To be carried out by the owner
Optional Industrial Injury Insurance		
Fire insurance		Fire insurance in Japan can be under 1.2.2 Site Production Management Cost in Viet Nam
Other insurances		
<b>(5) Salary of the Employees</b>		
Salary and various allowances of the employees in site office	1.2.2 Site Production Management Cost (4) Salary and various allowances of the employees in site office.	
<b>(6) Severance Pay</b>		
<b>(7) Legal Welfare Expenses</b>		
Worker's accident insurance, unemployment insurance, health insurance for site workers and staffs and employer's burden of welfare pension	1.2.2 Site Production Management Cost (4) Insurances and legal welfare for the employees in site office. 1.2.3 Worker-serving Cost (2) Social insurance, medical insurance, unemployment insurance for workers.	
<b>(8) Welfare Expenses</b>		
Amusement, rental clothing, medical expense, congratulatory and/or condolence and culture activities	1.2.2 Site Production Management Cost (5) Welfare expenses for the employees in site office.	
<b>(9) Office Supplies Cost</b>		
Office supplies, office equipment not included of fixed assets, newspaper and purchase reference books	1.2.2 Site Production Management Cost (6) Office materials and equipment	
<b>(10) Communication and Transportation Cost</b>		
Communication, transportation cost and travel expenses	1.2.2 Site Production Management Cost (7) Transportation and communication for administration department	
<b>(11) Social Expenses</b>		
		Social expenses can be under 1.2.2 Site Production Management Cost in Viet Nam
<b>(12) Compensation Cost</b>		
Compensation costs for damages to third-party's property, noise by construction, vibration, traffic noise etc.	2.8 Cost for reinstatement of infrastructure affected by construction (1) Costs for repairing, reinstatement or reconstruction of the infrastructure works surrounding the site damaged by the construction	
<b>(13) Outsourcing Expenses</b>		
<b>(14) Work Registration Fee</b>		
<b>(15) Miscellaneous Expenses</b>		
Other expenses not included in 1) to 14)	1.2.5 Enterprise's other Management Costs	

Source: Project team

**Table 8-4 Cost Items Included in Overhead in Viet Nam and Japan**

<b>Overhead</b>		
<b>Overhead Cost Items In Japan</b>	<b>Overhead Cost Items in Viet Nam</b>	<b>Remark</b>
<b>(1) Executive Reward</b>		
Reward of executives and auditors		
<b>(2) Salary of Employees</b>		
Salary, allowances and rewards of employees in a head office and branch	1.2.1 Enterprise's Administration Cost (1) Salary and allowances for employees in head and branch offices	
<b>(3) Retirement Allowance</b>		
<b>(4) Legal Welfare</b>		
Industrial Injury Insurance, unemployment, health and welfare annuity insurance of employees in a head office and branch	1.2.1 Enterprise's Administration Cost (2) Insurances and Legal welfare for employees in head and branch offices	
<b>(5) Welfare</b>		
Amusement, rental clothing, medical expense, congratulatory and/or condolence and culture activities	1.2.1 Enterprise's Administration Cost (3) Welfare and entertainment for employees in head and branch offices	
<b>(6) Repairs and Maintenances</b>		
Buildings, machines and devices, stock control in warehouse	1.2.1 Enterprise's Administration Cost (4) Maintenance for offices and equipment	
<b>(7) Office Supplies</b>		
Office supplies, office equipment not included of fixed assets, newspaper and purchase reference books	1.2.1 Enterprise's Administration Cost (5) Office materials and equipment	
<b>(8) Communication and Transportation Cost</b>		
Communication, transportation cost and travel expenses	1.2.1 Enterprise's Administration Cost (6) Transportation and communication	
<b>(9) Heating and Lighting Expenses</b>		
Electricity, water and gas	1.2.1 Enterprise's Administration Cost (7) Electricity and water	
<b>(10) Research Cost</b>		
Technical research and development cost		
<b>(11) Advertising Expenses</b>	1.2.1 Enterprise's Administration Cost (8) Public relations	
<b>(12) Social Expenses</b>	1.2.1 Enterprise's Administration Cost (9) Social expenses	
<b>(13) Donation, Charity</b>		
<b>(14) Rent of Space and Land</b>		
Land and building lease cost of office, dormitory and company housing	1.2.1 Enterprise's Administration Cost (10) Office	
<b>(15) Depreciation Cost</b>		
Buildings, vehicles, machine devices and office equipment	1.2.1 Enterprise's Administration Cost (12) Depreciation	
<b>(16) Research Repayment Cost</b>		
Special expenses of new products or new technology for research		
<b>(17) Development Repayment Cost</b>		
Special expenses for new technology or accept of new management organization, development of research and development of market		
<b>(18) Taxes and Dues</b>		
Real estate acquisition tax, taxes of fixed assets tax, road occupying cost and other tax		
<b>(19) Insurance Fee</b>		
Fire insurance and other nonlife insurances	1.2.1 Enterprise's Administration Cost (11) Insurances	

Overhead		
Overhead Cost Items In Japan	Overhead Cost Items in Viet Nam	Remark
<b>(20) Contract Guaranty Cost</b>		
<b>(21) Other Cost</b>		
Cost of database system, external meeting cost and association activity cost		
<b>(22) Added Benefit</b>	1.3 Advance calculated taxable Income	
Company tax, local government tax, dividend to stockholder, executive bonus, internal reserve and etc.		

Source: Project team

As shown in the above table, it is clear that some lacking items were found in cost contents of Viet Nam, compared with items of Japan. Especially, in the category of Common Indirect Cost items, there were so many lacking items found in Viet Nam system. In next section, further detailed contents of lacking items were identified, and then insufficiency of cost contents in Viet Nam system was analyzed. Based on the analysis, new cost estimation guideline of indirect cost was formulated.

### 8.2.2 Formulation of Guideline on the Cost Estimation for Indirect Construction Contractor Works

#### (1) Clarification of Insufficiency in Current Cost Estimation in Viet Nam

##### 1) Contents Lacked in Indirect Cost

Contents lacked in each item of Direct and Indirect cost in Vietnamese system were clarified from the detail comparison analysis between Vietnamese and Japanese cost estimation system. The final results are shown in Table 8-5. 2 items in Direct cost are minor and don't include so much cost. On the other hand, there are so many contents lacked in Indirect cost and those contents have to be counted in cost estimation as a standard. Therefore, those should be newly covered in revised new system in Viet Nam. The methods how to estimate those contents are shown as countermeasures with referring Japanese way of cost estimation. Those should be calculated in Vietnamese way by referring Japanese method by piling up. Actually, those costs are estimated in certain rates. Lacking contents clearly cause the low level set of Indirect cost rate in Viet Nam and lead to insufficiency in current cost estimation system in Viet Nam. Therefore, the contents lacked should be considered in the rate of Indirect cost in improved system of Viet Nam.

**Table 8-5 Contents Lacked in Direct and Indirect Cost in Viet Nam**

Contents Lacked of the Direct Cost				
No	Item	Contents Lacked	Countermeasures	Remark
		1) Rental fee of patent, 2) Utility Cost exclusive basic charge (Electricity, water etc.)	1) Calculate based on the numbers of patent to be used in construction and patent fee 2) Estimate in each construction methods using utility including disposal cost such as water, and asphalt clod.	(Cost counted in Viet Nam)

Contents Lacked of the Indirect Cost				
No	Item	Contents Lacked	Countermeasures	Remark
1	The Transportation Cost of Construction Machinery	1) Cost for demobilization of construction machinery out of the site after completion of the works; 2) Cost for decomposition and assembly of construction machinery	1) Include twice cost of (A) in Remark 2) Refer to Japanese manual	- Cost for mobilization of specialized construction machinery to the site (A)

Contents Lacked of the Indirect Cost				
No	Item	Contents Lacked	Countermeasures	Remark
2	Transportation Cost of Temporary, Support Materials	<ol style="list-style-type: none"> <li>1) Cost for bring out of the site</li> <li>2) Cost for transportation within the site.</li> </ol>	<ol style="list-style-type: none"> <li>1) Include twice cost of (B) in Remark</li> <li>2) 280,000VND/T (in case of Japan)</li> </ol>	- Cost for bring in the site (B)
3	Safety Cost	<ol style="list-style-type: none"> <li>1) Cost of monitoring and correspondence for safety management in the whole construction site;</li> <li>2) Cost of security staffs on off days;</li> <li>3) Cost of lifeboat in river and coastal construction;</li> <li>4) Cost of fire safety measures in long tunnel;</li> <li>5) Cost of prevention measures against anoxia;</li> <li>6) Cost of conferences, meetings on safety;</li> <li>7) Cost of safety managers at the entrance and exit of construction site neighboring facilities related to railway and airport;</li> <li>8) Cost necessary for prevention of high voltage work;</li> <li>9) Cost of monitoring for blasting of rock excavation in dam construction;</li> <li>10) Respiratory protective equipment for tunnel works;</li> </ol>	<ol style="list-style-type: none"> <li>1) Need to estimate and add to the safety cost or (by norm)</li> <li>2) Need to check whether this item should be included or not.</li> <li>3) This item is already included in the cost for occupational safety:</li> <li>4) Special work: should be estimated by pilling up</li> <li>5) Special work: should be estimated by pilling up</li> <li>6) Need to check whether this item should be included or not.</li> <li>7) Need to estimate and add to the safety cost (by norm)</li> <li>8) Special work: should be estimated by pilling up</li> <li>9) Special work: should be estimated by pilling up</li> <li>10) Special work: should be estimated by pilling up</li> </ol>	<p>- Cost for occupational safety including safety facilities such as warning sign, warning light, light in dark time, fence against enter, temporary guardrail, safety scaffold and safety net;</p> <p>- Protective goods such as helmets, safety shoes, gloves and clothes</p> <p>- Cost of traffic safety assurance for work construction</p>
4	Technical Management Cost	<ol style="list-style-type: none"> <li>1) Item and number of Quality Control tests for securing long-term durability of concrete is insufficient.</li> <li>2) No full-time engineer exclusive for Quality Control is allocated in contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1) To secure necessary cost for appropriate item and number of Quality Control tests in the guidelines for cost estimation.</li> <li>2) To secure necessary cost for establishing QC-Division which is exclusive for Quality Control, and allocating (1) QC Manager and (2) QC Engineers in the guidelines for cost estimation.</li> </ol>	<p>- Cost for material testing of the contractor for all of required testing of materials</p> <p>- Some other Cost regarding special test</p>
5	Temporary building	<ol style="list-style-type: none"> <li>1) Cost of laboratory</li> <li>2) Cost of setting, removing, maintenance of depot and material depository;</li> <li>3) Cost of setting, removing, and maintenance for supervisory staff office and gunpowder depot in concrete dam and fill dam project.</li> </ol>	<ol style="list-style-type: none"> <li>1) Refer to Japanese manual</li> <li>2) Ditto</li> <li>3) Supervisory staff office is not necessary because Consultant supervises the project instead of Project Owner. Regarding gunpowder depot, it should be estimated in project cost in the case of dam projects. This is same as 2).</li> </ol>	- Cost for Temporary housing on the site for dwelling and construction administration



Contents Lacked of the Indirect Cost				
No	Item	Contents Lacked	Countermeasures	Remark
6	Site Management Cost	<ul style="list-style-type: none"> <li>• Labor management cost                             <ol style="list-style-type: none"> <li>1) Recruitment and dissolution cost</li> <li>2) Entertainment and welfare for workers</li> <li>3) Meal and commuting costs</li> <li>4) Other insurance besides compulsory Industrial Injury Insurance</li> </ol> </li> <li>• Safety training cost                             <ol style="list-style-type: none"> <li>1) Training and study of labor safety and sanitary for site workers</li> </ol> </li> <li>• Insurance fee                             <ol style="list-style-type: none"> <li>1) Optional Industrial Injury Insurance and Fire insurance</li> </ol> </li> <li>• Severance pay</li> <li>• Welfare expenses                             <ol style="list-style-type: none"> <li>1) Amusement, rental clothing, medical expense, congratulatory and/or condolence and culture activities</li> </ol> </li> <li>• Office supplies cost                             <ol style="list-style-type: none"> <li>1) Newspaper and purchase reference books</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• Labor management cost                             <ol style="list-style-type: none"> <li>1) Communication fees for workers' recruitment, appointment travel expense, and dissolution allowance for all workers</li> <li>2) TV, Refrigerator, Washing machine, Air conditioning, Emergency medicines, Bedding, Lavatory, Fire extinguisher, etc.</li> <li>3) 3 meals per day and commuting fees such as pass for bus and gasoline for motor bike or car for commuting workers</li> <li>4) <u>If not necessary in Viet Nam, no counted</u></li> </ol> </li> <li>• Safety training cost                             <ol style="list-style-type: none"> <li>1) Implementation of educational seminar for safety and health at site, Special education for new comers and new technology</li> </ol> </li> <li>• Insurance fee                             <ol style="list-style-type: none"> <li>1) No statutory insurance such as Arbitrary Industrial Injury Insurance and Fire insurance (<u>If not necessary in Viet Nam, no accounted</u>)</li> </ol> </li> <li>• Severance pay                             <p>Severance pay and Accrued severance indemnities</p> </li> <li>• Welfare expenses                             <ol style="list-style-type: none"> <li>1) Amusement (recreation such as sport, game, movies, party etc.), Rental clothing for workers in office, Medical expense for sick workers, Congratulatory and/or condolence expense and Culture activities such as lectures, group session or competition for some hobbies etc.</li> </ol> </li> <li>• Office supplies cost                             <ol style="list-style-type: none"> <li>1) Newspaper and purchase of some reference books for construction technology</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>- Site Production Management Cost includes the costs for operation at site office; salary, insurances, legal welfare, welfare, transportation, communication for administration department; public relations, social expenses; welfare for workers; protective clothes and simple work tools for workers</li> <li>- Safety training for workers</li> <li>- Worker -serving Cost (under the General Cost) includes drinking water, insurances such as social insurance, medical insurance, unemployment insurance, fee for labor union;</li> </ul>

Contents Lacked of the Indirect Cost				
No	Item	Contents Lacked	Countermeasures	Remark
		<ul style="list-style-type: none"> <li>Outsourcing expenses</li> <li>Work registration fee</li> </ul>	<ul style="list-style-type: none"> <li>Outsourcing expenses Expenses occurring when special construction works are outsourced (5% of all cost of work in case of Japan)</li> <li>Work registration fee Construction work record must be submitted for database system in Japan (If not necessary in Viet Nam, no accounted.)</li> </ul>	

Rate 187VND/YEN

Source: Project team

## 2) Reset up of Indirect Cost Rate

### i) Present State

Rates of Indirect Cost of infrastructure works were compared between Viet Nam and Japan in the following Table 8-6.

**Table 8-6 Differences of Rate of Indirect Cost between Japan and Viet Nam**

(Infrastructure Works)

Item	Type of Works			
	Road Works		Bridge Works	
	Max of Rate	Min of Rate	Max of Rate	Min of Rate
In case of VN Norm				
(1) General Cost	5.5%	4.2%	5.5%	4.2%
(2) Advance Calculated Taxable Income	6%	6%	6%	6%
(3) Cost of temporary office & houses on site for dwelling and construction management under General Item	2%	2%	1%	1%
(4) Cost of some works undeterminable in the design under General Item	2%	2%	2%	2%
(5) Rate of Indirect Cost in construction cost in VN (to Direct cost) (5) = [1+ (1)]*[1+(2)]*[1+(3)+(4)] - 1	16.30%	14.87%	15.18%	13.77%
(6) Rate of Indirect Cost in construction cost in VN (to Direct cost) excluding the Enterprise's management Cost (to be assumed accounting for 20% of General cost) (6) = (5) - (1)*20%	15.20%	14.03%	14.08%	12.93%
In case of Japan Norm				
(7) Common Indirect Cost	26.94%	4.37%	27.04%	7.05%
(8) Site Management Cost	25.89%	22.58%	27.79%	19.33%
(9) Rate of Indirect Cost in construction cost in Japan (to Direct cost) (9) = [1+ (7)]*[1+(8)] - 1	59.80%	27.94%	62.34%	27.74%
Comparison				
(10) Comparison of Indirect Cost between Japan and VN (excluding Head Office Cost) (10) = (9)/(6)	<b>3.93</b>	<b>1.99</b>	<b>4.43</b>	<b>2.15</b>

Source; Viet Nam: Circular No. 06/2016/TT-BXD, Japan: Cost estimation Manual (MLIT)

From the comparison of the rates between Viet Nam and Japan in Indirect Cost, the big differences were found from the results in Table 8-6. The rate of Japan is 4.43 times higher at maximum and 1.99 times at minimum than Viet Nam. In average, it is 3.13 times higher in Japan.

Focused on each item, all rates are higher in Japan and especially, average of Site Management Cost is 23.9 % and the highest of all rates. This rate is much bigger compared to

5.5%, which will be almost equal to Site Management Cost in Viet Nam. Therefore, the rate of Site Management Cost is supposed to mostly cause the difference of Indirect Cost rate in both countries.

Basis of the present values of rate of Japan is from statistical processing from huge data gained from the surveys for long years. That is why each content rate of detail items of Indirect Cost items is not cleared and not specifically decided. Therefore, it is difficult to compare the rate in detailed items one by one in Indirect Cost.

The rate difference is supposed to be caused by several reasons such as due to some missing items in Indirect Cost in Viet Nam, difference of cost of personnel and materials in both countries and so forth. Among them, because biggest cause is the difference of Site Management Cost rate, analysis is carried out with focusing on this Site Management Cost.

ii) Estimation Method Suggested

In order to examine difference of Common Indirect Cost and Site Management Cost, study and analysis were implemented by utilizing case study projects.

a) Methodology

Quality management cost and Safety management cost in Common Indirect Cost and Site Management Cost, and Personnel cost in Site Management Cost, which are major items in each cost category, were particularly focused on among all items in order to amend present estimation system. Cost estimation based on standard quality and safety management methods and virtual site personnel system as the international standard level were considered with regard to case study projects to seek appropriate Indirect Cost rate.

b) Cost Estimation of Quality Management

The cost for construction quality management was estimated in accordance with the requirements specified in the proposed Standard Plan for Quality Management (hereinafter referred to as “SPQM”), which is one of the products of the Project.

The cost required for quality management including necessary item and number of tests, facilities, equipment, personnel expenses of engineers and miscellaneous expenses were summed up. Unit costs are based on the standard prices currently used in Viet Nam. Price quotation was also conducted as necessary. Finally the ratio of indirect cost was proposedly led by comparing the cost of those indirect costs necessary for quality management with the overall construction cost.

Quality management cost which belongs to “cost of rate calculation (direct cost rate)” was basic costs in quality management cost such as cost for quality test, employment of quality management engineers, etc. Quality management cost which belongs to “cost of rate calculation” was calculated based on prepared data in Table 8-7.

**Table 8-7 Data to be Prepared for Rate Calculation of Quality Management Cost**

Costs of Rate Calculation Items	Data to Prepare
1) Cost of all necessary tests described in Construction Specification (For Quality Management Plan)	<ul style="list-style-type: none"> <li>• List up of all necessary tests for quality management</li> <li>• Decision of number of tests of each test necessary for quality management</li> </ul>
2) Cost for the Quality Management Division	<ul style="list-style-type: none"> <li>• Salary of quality control engineers</li> </ul>

Source: Project team

Herewith, the study figured out the discrepancy of quality management cost in rate calculation for case study projects and the case applying SPQM to the project. Through the comparison, discrepancy in ratio of quality management cost which belongs to “cost of rate calculation” of Indirect cost was identified. Based on the gap analysis in the case study, the rate of additional necessary quality management cost for infrastructural construction project in Viet Nam (to the direct cost) is proposed as shown in Table 8-8. Those values have to be plus on current ones.

**Table 8-8 Proposed Additional Rate of Quality Management Cost for Indirect Cost**

	Proposed Rate to Direct Cost	Remarks
1) Cost of all necessary tests described in Construction Specification	0.61%	Common Indirect Cost
2) Cost for the Quality Management Division	0.61%	Site Management Cost
<b>TOTAL</b>	<b>1.22%</b>	

Source: Project team

c) Cost Estimation of Safety Management

The cost for safety management was estimated in accordance with the requirements specified in the proposed Standard Plan for Safety Management (hereinafter referred to as “SPSM”), which is one of the products of the Project.

The cost required for safety management is composed of two types of cost; common indirect cost and site management cost as well as quality management cost.

The cost items related to safety management in common indirect cost by the rate are shown in Table 8-9.

**Table 8-9 Safety Management Cost in Common Indirect Cost**

Common Indirect Cost	
<b>Safety Cost</b>	
(1)	Cost of monitoring and correspondence for safety management in the whole construction site
(2)	Cost of security staffs at site entrance
(3)	Cost of setting, removing and maintenance of safety facilities such as mark plate, sign, safety lighting, guard fence, temporary guardrail etc.
(4)	Cost of lighting in the case of works necessary lighting such as night work
(5)	Cost of safety supplies such as helmets, safety belt, safety shoes, gloves etc.
(6)	Cost of safety committee and other safety activities excluding training
(7)	Cost of dust work preventive measures

Source: Project team

The cost items related to safety management in site management cost by rate are shown in Table 8-10. Site management cost is specially the cost for construction site management mainly including various costs of personnel (staffs and workers at site) for education and training of safety.

**Table 8-10 Safety Management Cost in Site Management Cost**

Cost Items	Contents to be Estimated	Data to be Prepared
1	Safety Activity and Training	
	<ul style="list-style-type: none"> <li>• Cost of unit price of workers, material and etc.</li> <li>• If necessary, cost of safety experts from outside organization to be calculated.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of workers</li> <li>• Days and time schedule for safety activity and training</li> </ul>
2	Cost of Meeting for Safety and Health Education	
	<ul style="list-style-type: none"> <li>• Cost of unit price of workers, material and etc.</li> <li>• If necessary, cost of safety management engineer to be calculated.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of workers</li> <li>• Days and time schedule for safety activity and training</li> </ul>

Source: Project team

Herewith, the study figured out the discrepancy of safety management cost in rate calculation for case study projects and the case applying SPSM to the project. Through the comparison, discrepancy in ratio of quality management cost which belongs to “cost of rate calculation” of Indirect cost was identified. Based on the gap analysis in the case study, the rate of additional necessary safety management cost for infrastructure construction project in Viet Nam (to the direct cost) was proposed as shown in Table 8-11. Those values also have to be plus on current ones as well as Quality management cost rate.

**Table 8-11 Proposed Additional Rate of Safety Management Cost for Indirect Cost**

	Proposed Rate to Direct Cost	Remarks
1) Cost of all necessary items as Common Indirect Cost by rate	1.08%	Common Indirect Cost
2) Cost for the training and education for workers at site	0.19%	Site Management Cost
TOTAL	1.27%	

Source: Project team

d) Personnel Cost in Site Management Cost

Paid attention on items structuring Site Management Cost, Personnel cost, which is major item in it, was particularly focused on among all items. To seek its appropriate rate, virtual site personnel system based on the international standard level was created with regard to case study projects and then compared to actual case projects. Necessary number of staffs at least and rational organizational system on the site was established. Then, after comparison analysis between two cases, the difference was identified and the results can lead appropriate setting up of rate of Site Management Cost. Based on this analysis, Site Management Cost excluded safety training cost needs **8.20%** of Direct Cost because of larger personnel cost of engineer staffs at site as standard level. Moreover, **7.30%** is the recommended value calculated in another case in case study projects.

(2) Recommendation of New Estimation System

1) Result and Indirect Rate Recommended

Both Common Indirect Cost and Site Management Cost rates should be much increased from current figures in present Norm. Common Indirect Cost is increased by **1.69%** and Site Management Cost is **8.55%** and much bigger than 4.4% compared to current Norm case in accordance with analysis results. It is recognized that personnel cost at the site, which has the biggest share in site cost, is much more necessary than current case from those analyses. Those rates are strongly recommended with this study's results.

2) New Estimation System

Through Study of comparison analysis with regard to indirect cost estimation system of public construction works between Viet Nam and international standard including Japan, it was identified that Indirect cost of Viet Nam is rather less than international level. Low cost of public works may cause construction accidents and poor quality of construction objects. Actually, Viet Nam has recent tendency of increase of labor accidents in construction fields according to survey data of Ministry of Labor, Invalids and Social Affairs (MOLISA) in 2014. Moreover, many problems of construction quality occurred in every construction sector in Viet Nam. It is supposed to be that those facts may be due to cost estimation of low cost of public works.

From this point of view, Indirect Cost including Overhead should be increased more than existing amount in Viet Nam. Therefore, it is strongly recommended that current cost estimation system of Indirect Cost be improved to be appropriate as well as international standard.

The rates recommended here are derived from the analysis based on a few case study projects. More reasonable values should be determined from studies and analysis on much more number of projects implemented so far in Viet Nam. The more number of projects, the better results extracted. Those studies and analysis must be done thereafter by Vietnamese staffs concerned.

Moreover, indirect cost cannot always be estimated by rate. There are some items of indirect costs to be calculated by piling up method. Depending on construction project, it is also permitted to clearly indicate items of indirect costs which should be calculated by piling up in particular specifications.

(3) Recommendation for System Improvement

In order to improve existing cost estimation system in Viet Nam, new surveys for deciding reasonable Package Price are recommended. Labor costs and prices are changed every year due to economical state of the country. Depending on the trend, the cost of public projects and profit rate of the contractors are significantly affected. Therefore, cost estimation system shall also be improved in terms of the trend. The system must not be invariant and fixed. It should be flexible to the change of the economic trend. Reasonable improvement of cost estimation system can be implemented by the following basic surveys of actual state of construction site.

1) Expense Trend Survey

i) Purpose of the Survey

This survey is implemented to grasp the reality of expenses in recent public construction works and herewith to verify whether existing rates of expense (Indirect cost and Overhead) in present cost estimation system meet actual situation of executing construction works. If there is some discrepancy, the rates must be amended based on the results of the resent survey. The survey shall be done to decide the most appropriate rates of expense every year in this way.

ii) Expected Outcome

It is so difficult to pile up all work items including indirect works such as quality control, administration works, cleaning etc. Therefore, indirect works are calculated by rates to direct cost. With this, cost estimation works are significantly reduced and bidding procedures are largely labor-saving.

Therefore, the rates decided by the survey are very important in cost estimation work and must be appropriate and accurate values to reflect actual indirect works in construction projects.

iii) Survey Flow

Survey Form is prepared in advance and delivered to the contractors and finally collected by Procuring Entities. Form must be filled out exactly and accurately by the contractors. If not correct, the data are not accurately reflected to the rates and it may lead wrong cost estimation. All data should be true figures and amount of money expended.

The data collected are sent to the special Survey Agency, which is established for only this survey, and analyzed precisely. Through regression analysis, adequate rates in each divided some regions are presented to Procuring Entities. Finally, the results are authorized and disseminated.

2) Analysis of Financial Statements

As well as the rate of Indirect Cost, in order to grasp the appropriate overhead cost of contractors, Financial Statements of some extracted construction companies are collected and examined. These are confidential sources; therefore, they must be carefully preceded. Designated companies have to submit their management materials including Financial Statements to Agency. Agency examines all data and implements regression analysis. Finally, the most recent and integrated overhead cost is confidentially suggested to Procuring Entities. With these results, Overhead rate of cost estimation system is revised.

3) Survey Method

i) Establishment of Survey Agency

In order to precede this survey and analysis efficiently and successfully, a new organization dealing with those activities is necessary as dedicated Agency in MOC of Viet Nam. The functions of this Agency are the followings.

- ♦ Making Survey forms and print
- ♦ Delivering forms to Procuring Entities to reach project owners and contractors

- ♦ Collecting forms filled out from project owners and contractors
- ♦ Indirect Cost rate and Overhead rate are examined by regression analysis.
- ♦ The results of examination and analysis are reported to MOC

ii) Survey Period

Figure 8-7 shows schedule of all procedures of this Survey in one-year survey period. Amendment of cost estimation system should be implemented every year to efficiently catch up trend of economical state in Viet Nam. Therefore, all survey procedures such as actual surveys, analysis and its reflection to new estimation system shall be carried out within one year in every year and herewith, circulars with regard to cost estimation system must be revised along the results of analysis after Survey.

Procedures	Month	1	2	3	4	5	6	7	8	9	10	11	12
1) Extraction request of Target Projects	=												
2) Report of Target Projects decided	=												
3) Targeted Projects reported to Agency	=												
4) Making Survey form	=												
5) Delivery of form to Procuring Entities (PPC)	=												
6) Delivery of form to PMU	=												
7) Delivery of form to Contractors	=												
8) Filling out in form by contractors	=												
9) Submission of form to PMU	=												
10) Submissin of form to Procuring Entities	=												
11) Submission of form to Agency	=												
12) Analysis at Agency	=												
13) Report of results of analysis to MOC	=												
14) Decision of new Rates	=												
15) Amendment of estimation system	=												
16) New Circular promulgation	=												

Source: Project team

**Figure 8-7 Schedule of Expense Trend Survey**

4) Pilot Expense Trend Survey

Before implementation of Actual Expense Trend Survey, it was strongly recommended to carry out trial survey as Pilot Expense Trend Survey. Therefore, JICA team asked State Authority for Construction Economics (SACE, upgraded from Construction Economics Department: CED in July 2017) to execute this pilot survey within this Project period for just training and grasp of significance of this survey. After a few times discussion, finally MOC decided to carry out pilot survey and implemented at 2 PMUs and 3 construction projects, targeting 17 works in total. This survey is actually out of scope of this Project; therefore, its results are not mentioned in this report. However, this pilot survey was so effective that staffs concerned in SACE could experience good training for the future actual survey.

(4) Framework of Guideline on the Cost Estimation for Indirect Construction Contractor Works

Based on the results from the study of existing cost estimation system in Viet Nam, new improved system is proposed for the setting up reasonable and standard cost of the future construction projects in Viet Nam. As output document of the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project), Guideline on Cost Estimation for Indirect Construction Contractor Works (GLCE- 1) was compiled and recommended. In this GLCE- 1, mechanism of cost

estimation and how to implement appropriate estimation of construction projects for Viet Nam are discussed and presented. With this GLCE- 1, not only cost estimators in governmental offices, but also many bidders will be benefited when they make cost estimation of the new project. GLCE- 1 is created as separate volume. Framework of GLCE- 1 is shown here. All Chapters, Sections and their summaries are briefly described in the following Table 8-12.

**Table 8-12 Framework of Guideline on the Cost Estimation for Indirect Construction Contractor Works (GLCE- 1)**

Chapter	Section	Subsection	Summary	
<b>1. Purpose</b>			Purpose of Guideline	
<b>2. Related Regulation</b>			All Regulations regarding Cost Estimation in Viet Nam is listed.	
<b>3. Mechanism of Cost Estimation</b>	<b>3.1 Definition of cost estimation</b>	<b>(1) Importance</b>	Importance and significance of implementation of cost estimation	
		<b>(2) Necessity</b>	Necessity of cost estimation from standpoints of all stakeholders	
		<b>(3) Construction Package Estimate</b>	Definition, significance and method to be decided of Package price estimate	
		<b>(4) Condition for estimation</b>	Execution plan of construction is the important condition to complete appropriate cost estimation.	
	<b>3.2 Structure of cost</b>	<b>(1) Whole structure</b>	Rational whole construction structure is suggested for Vietnamese new cost estimation system.	
		<b>(2) Component and contents</b>	Definition of each cost component is described.	
	<b>3.3 Construction period</b>	<b>(1) Definition</b>	Definition of construction period and its necessary elements are clarified.	
<b>(2) Purpose and importance</b>		Purpose of setting construction period and its three important components to be satisfied are explained.		
<b>(3) Procedure of setting period</b>		The procedure to decide reasonable construction period is provided.		
<b>(4) Construction period</b>		Determining appropriate construction period based on procedure.		
<b>4. Direct Cost</b>	<b>4.1 Definition</b>		Definition of Direct Cost is expounded.	
	<b>4.2 Structure</b>		Structure of Direct Cost is figured.	
	<b>4.3 Component of Direct cost</b>	<b>(1) Material cost</b>		Cost estimation method of Material cost is suggested.
		<b>(2) Labor cost</b>		How to estimate Labor cost is explained.
		<b>(3) Machine cost</b>		Definition and structure of Machine cost is described.
		<b>(4) Patent fee</b>		Fee in case of patented method of construction.
<b>(5) Utility cost</b>			What is Utility cost is defined.	
<b>5. Indirect Cost</b>	<b>5.1 Definition</b>		Definition of Indirect Cost is expounded.	
	<b>5.2 Structure</b>		Structure of Indirect Cost is figured.	
	<b>5.3 Component of Indirect Cost</b>	<b>(1) Common indirect cost</b>		Listing up the cost items for setup and preparation works for main construction works.
		<b>(2) Site management cost</b>		Listing up the cost items for management of construction works and construction site.
	<b>5.4 Notice of indirect items</b>		How to notice the indirect items not included in rate to bidders	
	<b>5.5 Method of estimation</b>	<b>(1) Present state</b>		Comparison of present rates of Indirect Cost between Japan and Viet Nam
		<b>(2) Estimation method analysis for New System</b>		Appropriate and reasonable rate of Indirect Cost is suggested based on analysis of case study projects.
	<b>6. Overhead</b>	<b>6.1 Definition</b>		Definition of Overhead cost and its explanation.
<b>6.2 Component</b>		<b>(1) Head and</b>	Listing up the components of Head and branch	



Chapter	Section	Subsection	Summary
		<b>branch offices expenses</b>	offices expenses included in the rate.
		<b>(2) Profit</b>	Listing up the components of Additional benefit included in the rate.
	<b>6.3 Method of estimation</b>	<b>(1) Present state</b>	Explanation of present insufficient status of Overhead cost in Viet Nam
		<b>(2) Estimation method suggested</b>	Suggestions for cost estimation method of Overhead cost as new concept for construction projects of Viet Nam.
<b>7. Conclusion and Suggestions</b>	<b>7.1 Cost estimation of Indirect Cost</b>		Conclusions of study regarding estimation method of Indirect Cost are explained The appropriate rate setting of Indirect Cost is suggested for New System.
	<b>7.2 Suggestion for improvement</b>	<b>(1) Expense trend survey</b>	Purpose, expected outcome and survey flow of the survey is explained, in which the reality of expenses in the most recent public works implemented in Viet Nam is grasped.
		<b>(2) Analysis of financial statements</b>	To grasp the appropriate Overhead cost of contractors, Financial Statements of extracted companies from construction industry are examined.
		<b>(3) Survey method</b>	Establishment of special Agency for this survey, survey period and method of analysis are described.
<b>Appendix</b>			

Source: Project team

(5) Submission of Guideline on the Cost Estimation for Indirect Construction Contractor Works

Guideline on the Cost Estimation for Indirect Construction Contractor Works (GLCE- 1) was drafted and agreed in Component Project Management Unit (CPMU) meeting in April 2016. Subsequently GLCE- 1 was presented in the meeting between MOC Project Preparation Members (at the time Project Coordination Unit: PCU was not organized yet) and JICA team, and the Second JSC meeting in April 2016. The dialogues with the construction industries (Vietnam Association of Construction Contractors: VACC, Vietnam Engineering Construction Association: VECAS and Overseas Construction Association of Japan Incorporation: OCAJI) were arranged for GLCE- 1 and the comments were collected from them in the same month. After reviewing all comments, GLCE- 1 was compiled and submitted to MOC in July 2016 with the covering letter.

### 8.2.3 Formulation of Guideline on the Cost Estimation for Direct Construction Contractor Works

Guideline on the cost estimation for direct construction contractor works (GLCE-2) was prepared and submitted in September 2017 to State Authority for Construction Economics (SACE). This guideline combined with the guideline on the cost estimation for indirect construction contractor works (GLCE-1) into the guideline on the cost Estimation for construction packages (GLCE).

(1) Implementation Schedule of Formulation of GLCE- 2

The schedule for preparation of GLCE- 2 is shown in Figure 8-8. The preparation of GLCE-2 was carried out as per the schedule. As stated aforesaid, GLCE (combining GLCE- 1 and 2) was agreed in CPMU meeting and presented in PCU meeting and the Fifth JSC meeting in October 2017. The GLCE was then submitted to MOC in October 2017 with the covering letter.

However, SACE requested to add the scaffolding work and finishing work of building work into GLCE in the CPMU meetings. These two works were added to the GLCE eventually and the revised GLCE was compiled and submitted to MOC in January 2018 with the covering letter.

Tentative Schedule	2016				2017											
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Preparation																
Review of cost estimation system in VN																
Identification of issues on cost estimation system																
Study of improvement and modification on identified issues																
Introduce of the cases in Japan																
Preparation of guideline on Cost Estimation for Direct Construction Works																
- Preparation of the framework																
- Contents of guideline for Labor Cost																
- Contents of guideline for Material Cost																
- Contents of guideline for Machinery Cost																
- Norm of the main transportation work																
- Elaboration, editing, compiling and others																
Submission of GLCE for Direct Construction Works																
Review and Improvement of GLCE on Direct Construction Works																
Approval for GLCE on Direct Construction Works																
Training and seminar																

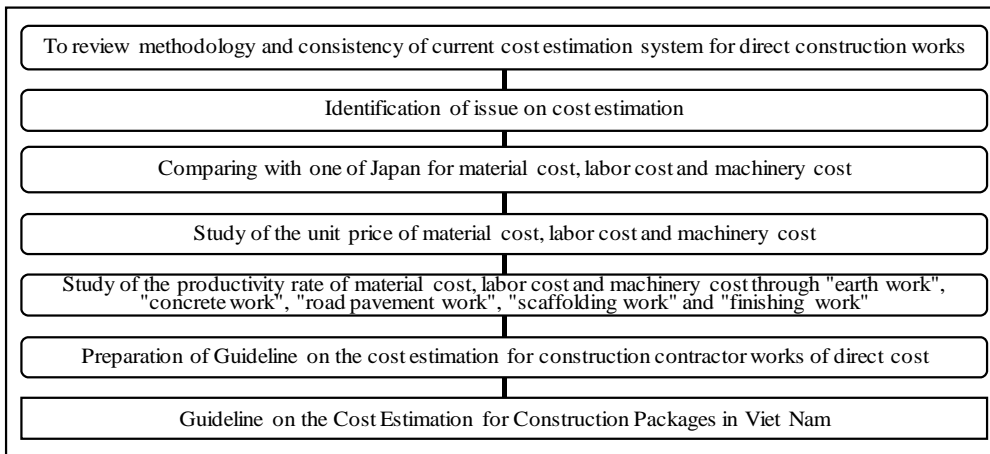
Source: Project team

**Figure 8-8 Implementation Schedule of Formulation of Guideline on the Cost Estimation for Direct Construction Contractor Works (GLCE- 2)**

(2) Development Process of GLCE- 2

Basically, direct cost is decided by values of productivity multiplied by unit price. At this stage, current cost estimation system, issues, comparisons and unit price of material cost, labor cost, machinery cost and productivity rate were discussed.

Development process of direct cost estimation improvement is shown in Figure 8-9.



Source: Project team

**Figure 8-9 Development Process of Guideline on the Cost Estimation for Direct Construction Contractor Works (GLCE-2)**

(3) Definition of Direct Cost

The definition of direct cost is shown in Table 8-13. There are small and minor differences, however, the main point of direct cost is almost same between Viet Nam and Japan.

**Table 8-13 Comparison of Definition of Direct Cost**

06/2016/TT-BXD, dated 10 March 2016, Guiding the Determination and Management of Construction Investment Costs in Viet Nam	Cost Estimation standards for Infrastructure Works in Japan
<ol style="list-style-type: none"> <li>1. Direct cost consists of material cost (including the materials provided by the employer), labor cost, and construction machine and equipment cost.</li> <li>2. Direct cost is determined for construction works, work items, temporary works, support works for construction.</li> <li>3. The costs of material, labor, and construction machine and equipment in the direct cost are determined by (1) the volume and the prices of construction works or (2) the consumption volume of material, labor, and construction machine and equipment and their respective unit prices.</li> </ol>	<ol style="list-style-type: none"> <li>1. Direct cost is the cost that is used only for purely creating the construction objects.</li> <li>2. Temporary works included in direct cost are support works, scaffolding, earth retaining work, dewatering, temporary bridge and various plants for concrete and asphalt etc.</li> <li>3. Direct cost is composed of 3 main elements such as construction material, labor and machines. It was composed of three classifications such as kinds of work, their subdivision and detail of subdivision, and is calculated based on 3 above elements by piling up.</li> </ol>

Source: Project team

(4) Method of Direct Cost Estimation

There are 3 types of cost estimation method in Japan as described below.

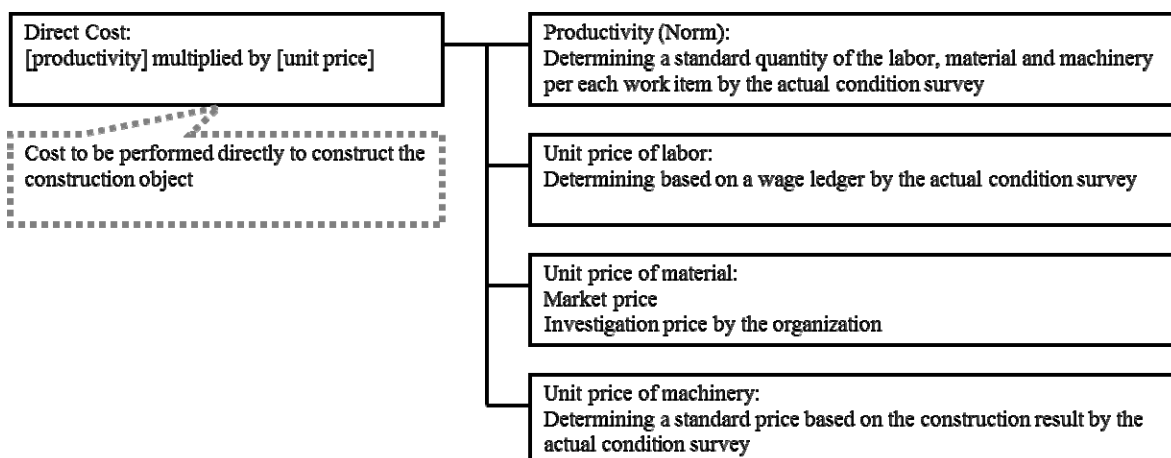
- i) Piling up cost estimation method
- ii) Market unit price method
- iii) Construction package-type cost estimation Method.

This GLCE was prepared referring “Cost Estimation Guideline of MLIT published in 2011”. Accordingly, the background of using “the piling up cost estimation method” is mentioned here.

At present, construction package-type cost estimation method is being expanded instead of piling up cost estimation method in Japan. This method is being improved based on piling up method. On the other hand, the piling up cost estimation method is adopted in Viet Nam and there are some items which should be improved in order to increase the accuracy of cost estimation. Therefore, piling up cost estimation method in Viet Nam shall be improved based on the Japanese piling up cost estimation method in CCQS Project.

(5) Structure and Contents of Direct Cost

The contents of direct cost are same in Viet Nam and Japan cost estimation system. Direct cost is decided by values of productivity multiplied by unit price. The structure and contents of direct cost are shown in Figure 8-10.



Source: Project team

**Figure 8-10 Structure and Contents of Direct Cost**

(6) Material Cost

1) Actual Condition of Material Cost

Unit price of material cost is determined in accordance with the specification, type and quality of the material used for construction works based on the market prices provided by prestige and qualified organizations and quotations of manufactures, information of prices of suppliers or the prices of material having similar standard, and quality have been and being used in other projects, including transportation to sites.

2) Issues Identified by C/Ps and JICA Team

Issues of material cost identified by C/Ps and JICA team are shown in Table 8-14.

**Table 8-14 Issues of Material Cost Identified by C/Ps and JICA Team**

Issues identified by C/Ps	
■	Transaction quantity is not taken into consideration when determining material price. Even though contractors buy a construction material at large quantity, the price is same at small quantity.
■	Transportation cost of material in alleys is not considered or insufficient to adopt.
■	Transportation cost of temporary material such as scaffolding and formwork are calculated in direct cost, but these are in indirect cost in Japan according to the Manual for Cost Estimation in Japan.
Issues identified by JICA Team	
■	Transaction quantity is not taken into consideration when determining material price. Even though contractors buy a construction material at large quantity, the price is same at small quantity.

Source: Project team

3) Gaps and Differences of Material Cost

i) Difference of Article of Large and Small Quantity

The main materials for construction such as deformed reinforce bar, ready mixed concrete, asphalt mixture and Portland cement were compared between Viet Nam and Japan.

The deformed reinforce bar and asphalt mixture are considered as cases of large and small purchase in Japan. This concept is necessary to implement accurate cost estimation of material cost. The comparison tables of main construction material on transaction amount are shown in Table 8-15 to 8-18.

Deformed Reinforce Bar, SD295A D13

**Table 8-15 Price of Deformed Reinforce Bar, SD295A D13**

In Viet Nam (1,000VND)				
Order	Transaction Quantity	Unit	Price in Hanoi	Price in HCM
-	any quantity	t	12,600	13,200

In Japan (1,000VND)				
Order	Transaction Quantity	Unit	Price in Tokyo	Price in Osaka
L	50~200 t	t	11,000	10,800
M	20~50 t	t	11,600	11,000
S	1~5 t	t	13,000	12,000

Source: Kensetsubukka, February, 2017 (1JPY=0.0050VND)

Ready Mixed Concrete, M200-12

**Table 8-16 Price of Ready Mixed Concrete, M200-12**

In Viet Nam (1,000VND)				
Order	Transaction Quantity	Unit	Price in Hanoi	Price in HCM
-	any quantity	m <sup>3</sup>	820	1,000

In Japan (1,000VND)				
Order	Transaction Quantity	Unit	Price in Tokyo	Price in Osaka
-	200~1,000m <sup>3</sup>	m <sup>3</sup>	2,334	2,720

Source: Kensetsubukka, February, 2017 (1JPY=0.0050VND)

Asphalt Mixture, 20 (Grain size)

**Table 8-17 Price of Asphalt Mixture, 20 (Grain size)**

In Viet Nam (1,000VND)				
Order	Transaction Quantity	Unit	Price in Hanoi	Price in HCM
-	any quantity	t	1,235	1,290

In Japan (1,000VND)				
Order	Transaction Quantity	Unit	Price in Tokyo	Price in Osaka
L	200~2,000 t	t	1,940	1,880
S	< 200 t	t	2,100	2,080

Source: Kensetsubukka, February, 2017 (1JPY=0.0050VND)

Portland Cement, Normal Type

**Table 8-18 Price of Portland Cement, Normal Type**

In Viet Nam (1,000VND)				
Order	Transaction Quantity	Unit	Price in Hanoi	Price in HCM
-	any quantity	t	1,145	1,523

In Japan (1,000VND)				
Order	Transaction Quantity	Unit	Price in Tokyo	Price in Osaka
-	200~1,000 t	t	2,100	1,800

Source: Kensetsubukka, February, 2017 (1JPY=0.0050VND)

ii) Transportation Cost of Material

In case of Japan, the transportation cost of material in alleys is not considered, which is similar in Viet Nam. The road network and road condition in Viet Nam is different from Japan's case. It shall be estimated by piling up in direct cost estimation portion.

4) Improvement Plan

i) Transaction Quantity and Price

The transaction quantity is the important factor to decide the price of material. Normally, the transaction price shall be changed depending on its quantity. Thus, it is recommended that the transaction quantity should be studied by the actual condition survey.

ii) Actual Condition Survey for Unit Price of Materials

The current practice in Viet Nam, the material price survey is conducted by Department of Construction. However, there are some items to be improved in the current survey method. The following items shall be added in the current survey.

- a) Transaction quantity
- b) Distribution route and form
- c) Condition and location of a delivery

In addition, the construction materials shall be categorized in view of basic material (i.e. concrete, rebar etc.) and variation of price fluctuation. The survey method can be changed depending on the category.

The detailed explanation is stipulated in (10) Actual Condition Survey.

(7) Labor Cost

1) Actual Condition of Labor Cost

i) Wage of Labor

The salary of labor as unit cost is determined by Department of Construction (DOC) and People's committees of central-affiliated cities or provinces with relevant agencies to implement the investigation. The general wage level of construction workers in the local market is higher than the unit labor cost shown in Table 8-19. It is regulated that the People's

committee of province or central-affiliated city discusses with the local construction department to reach unanimous agreement on the unit labor cost before it is announced. The base salary of the unit labor cost is determined in 4 regions in the Circular 05/2016/TT-BXD.

If the salary which is surveyed exceeds its range, DOC shall consult it with MOC.

The investigated actual average salary by People's committee of province or central-affiliated city includes compulsory payments of insurance premiums paid by the worker to the State and excludes those paid by the employer (social insurance, health insurance, union dues and unemployment insurance), which is similar in Japan.

**Table 8-19 Range of Base Salary by Region**

(Unit: VND/month)

Region I	Region II	Region III	Region IV
2,350,000 - 2,530,000	2,150,000 - 2,320,000	2,000,000 - 2,154,000	1,900,000 - 2,050,000

Source: Circular 05/2016/TT-BXD

ii) Group of Labor

There are 2 groups of construction worker in the Vietnamese cost estimation system. The division of occupation is shown in Table 8-20.

**Table 8-20 Division of Occupation**

Group I	Group II
1) Woodwork 2) Bricklaying 3) Metal work 4) Concrete work (except for asphalt concrete) 5) Formwork 6) Completion work 7) Earthwork (excavation and embankment) 8) Construction survey; 9) Operation of construction machinery and equipment (earthwork machinery, rammer, lifting equipment, drilling equipment, pile driver, pump, welder, etc.).	Workers who perform construction works other than those are specified in group I

Source: Circular 05/2016/TT-BXD

iii) Grades of Labor

The grades of Group I and II is shown in Table 8-21. Some occupations such as survey and testing engineer, artisans, vehicle operator, operator of ships, vessels and other equipment and engineer diver have other coefficients. The grade of construction worker has been set as each work item.

**Table 8-21 Grades of Construction Worker**

Grades of construction worker	1	2	3	4	5	6	7
Group I Salary coefficient	1.55	1.83	2.16	2.55	3.01	3.56	4.20
Group II Salary coefficient	1.76	2.07	2.44	2.86	3.37	3.96	4.65

Source: Circular 05/2016/TT-BXD

iv) Unit Labor Cost

The formula of unit labor cost of a worker who directly performs construction works is below.

$$\text{Unit Labor Cost} = [\text{Monthly base salary}] \times [\text{Coefficient}] \times [1/T]$$

Monthly base salary: refer to Table 8-19

Coefficient: refer to Table 8-21

T: 26 working days per a month

2) Issues Identified by C/Ps and JICA Team

Issues of labor cost identified by C/Ps and JICA team are shown in Table 8-22.

**Table 8-22 Issues of Labor Cost Identified by C/Ps and JICA Team**

Issues Identified by C/Ps	
■	There are two workers-groups and the grades of workers are heavily theoretical and consist of seven grades. It does not reflect the actual practice of labor markets (main workers, assist workers and special skilled workers of every job).
■	The calculation of labor wages based on the workers-groups, and workers grades as per current regulations is applied according to the average-grade of workers for one quantity of certain work and is not conformable with the international standard methods according to the essence of works with different requirements on labors (main workers, assist workers, and special skilled workers).
■	The wages of workers are calculated as per the general rates and work volume that affects the labor productivity of workers is not taken into consideration.
■	In Vietnam, cost for tidying-up, clean-up of the construction site is counted in Direct Cost, but this Cost is counted in Indirect Cost in Japan.
Issues Identified by JICA Team	
■	The 2 workers-groups do not reflect a price of each occupation on the differentiation of technical aspect.
■	There is only one item of labor cost in the unit price schedule. It cannot reflect the actual condition at site.
■	Definition of each occupation and 7 grade factors are not clear in Circular 06.

Source: Project team

3) Gaps and Differences of Labor Cost

As a result of the comparison of labor cost, there are two big differences between both countries and they are as follows.

- ◆ Setting method of unit labor cost (salary)
- ◆ Type of occupation and grouping system

Two workers-groups and the grades of workers are simple to calculate labor cost. However, that grouping does not reflect the unit labor cost and quantity of each occupation. Therefore, the detail of unit price schedule is not clear.

The way to determine a base salary between both countries is to carry out the actual condition survey. In case of Viet Nam, base salary is determined with average of all occupations. On the other hand, base salary is determined by each occupation in Japan by each province.

i) Unit Labor Cost Setting Method

Unit labor cost setting method is shown in Table 8-23.

**Table 8-23 Comparison of Unit Labor Cost Setting Method**

Viet Nam	Japan
People's committees of central-affiliated cities or provinces are assigned to carry out the investigation and survey for announcing the base salary of each province. Base salary is determined in each district of every province. Calculation of unit labor cost is [Monthly base salary] x [Coefficient] x [1/T]	The base salary is determined by the actual survey in every year. This survey is conducted by Ministry of Land, Infrastructure, Transport and Tourism (MLIT) and Ministry of Agriculture, Forestry and Fisheries. It is determined in each province.

Source: Project team

ii) Type of Occupation and Grouping System

The system of type of occupation in both countries is shown in Table 8-24.

**Table 8-24 Comparison of Type of Occupation and Grouping System**

Viet Nam	Japan
There are 2 workers-groups and the grades of workers are heavily theoretical and consist of 7 grades.	There are 51 occupations including transportation, caisson, building, bridge, painting, tunnel, diving work and traffic guide.

Source: Project team

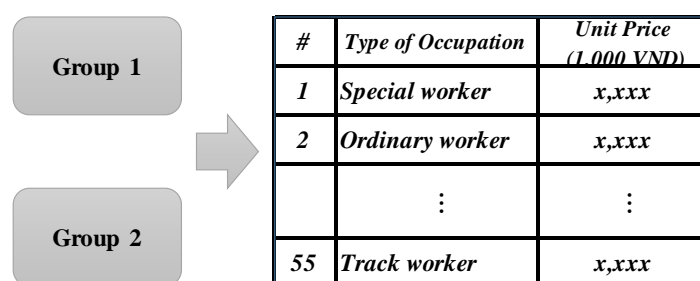
4) Improvement Plan

i) Labor Cost Item

In the current cost estimation system of Viet Nam, there are 2 workers-groups only. Moreover, there is one labor cost item only in the unit price schedule of Viet Nam. The current system does not represent the detail type of occupation and quantity of labor.

In this situation, the 2 worker-groups shall be subdivided in order to carry out accurate cost estimation and reflect the current construction site.

The schematic of improvement plan for occupation is shown in Figure 8-11. The base salary of each occupation shall be surveyed by the actual condition survey.



Source: Project team

**Figure 8-11 Schematic of Improvement Plan for Occupation**

The type of occupation is recommended 55 types after the discussion in the CPMU meeting. The list of type of occupation is shown in Table 8-25. This list was prepared referring the type of occupation in Japan.

**Table 8-25 List of Type of Occupation**

Infrastructure Work			Building Work		Other Work		
1	Special worker	19	Tunnel special worker	37	Carpenter	53	Construction survey
2	Ordinary worker	20	Tunnel worker	38	Plasterer	54	Survey and testing engineer
3	Worker for light work	21	Tunnel foreman	39	Fitter	55	Traffic guide
4	Landscaping worker	22	Bridge special worker	40	Chipping worker		
5	Slope worker	23	Bridge painter	41	Waterproofing worker		
6	Scaffold erector	24	Bridge foreman	42	Steel metal worker		
7	Mason	25	General foreman	43	Tiler		
8	Concrete block mason	26	Diver	44	Sash worker		
9	Electrician	27	Diving liaison	45	Interior working		
10	Rebar man	28	Diving air supplier	46	Glazier		
11	Steel worker	29	Captain (G1~G2)	47	Joiner		
12	Painter	30	Mate I, machine engineer I (G1~G2)	48	Air duct worker		
13	Welder	31	Mate II, machine engineer II (G1~G2)	49	Moisture keeping worker		



Infrastructure Work			Building Work		
14	Operator (Special)	32	Sailor	50	Equipment worker
15	Operator (Ordinary)	33	Mechanic, electrician	51	Building block worker
16	Worker for caisson	34	Forest and erosion control worker	52	Artisans
17	Foreman for caisson	35	Track worker		
18	Jumper	36	Timberman		

Source: Project team

ii) Example of Unit Price Schedule

The unit labor cost is determined by base salary and coefficient of the worker-group. The example of unit price schedule in Viet Nam is shown in Table 8-26.

**Table 8-26 Example of Concrete Placing Work by Man-power for Small Retaining Wall ( $H \leq 2m$ ) (Current Practice)**

Description	Specification	Unit	Quantity	Unit Price	Amount (VND)	Remark
<b>Labor</b>	<b>3.5/7</b>	man-day	32.9	251,041	8,259,249	
Total					8,259,249	
Per $1m^3$					82,592	

per  $10m^3$

Source: Construction Norm Book

After the introduction of improvement plan, the Table 8-26 is changed to Table 8-27. Each occupation and quantity item is estimated in detail in the unit price schedule. These quantities shall be surveyed by the actual condition survey.

**Table 8-27 Examples of Concrete Placing Work by Man-power for Small Retaining Wall ( $H \leq 2m$ ) (Improvement)**

Description	Specification	Unit	Quantity	Unit Price	Amount (VND)	Remark
General foreman		Person	2.3	xxx,xxx	xxx,xxx	
Special worker		Person	0.7	xxx,xxx	xxx,xxx	
Ordinary worker		Person	8.1	xxx,xxx	xxx,xxx	
Timberman		Person	4.1	xxx,xxx	xxx,xxx	
Miscellaneous expense rate		%	12.8			
Total					xxx,xxx	
Per $1m^3$					xx,xxx	

per  $10m^3$

Source: Project team

iii) Actual Condition Survey for Unit Price of Labors

In current practice in Viet Nam, the labor salary survey is conducted by Department of Construction. However, the salary of each occupation is unclear. Because the current unit price of labor is calculated in average, based on all occupations. In order to increase the accuracy of cost estimation, it is necessary to study the salary of each occupation by the actual condition survey.

The definition of occupations is indicated in the Appendix of GLCE. Before starting the actual condition survey, the review of definition of occupation is necessary.

The detailed explanation is stipulated in (10) Actual Condition Survey.

(8) Machinery Cost

1) Actual Condition of Machinery Cost

i) Price of Machinery Shift

Machinery cost in Viet Nam is called “Price of machinery shift”. The determination of machinery shift is the average cost for “one working shift” in accordance with the regulation on constructional machine and equipment. “One working shift” is 8 hours per day including operation, waiting and moving hour. Price of machinery shift includes all or some cost items like cost of depreciation, repair, fuel/energy, controlling labor and other costs of machine.

The price of machine is determined by this formula:

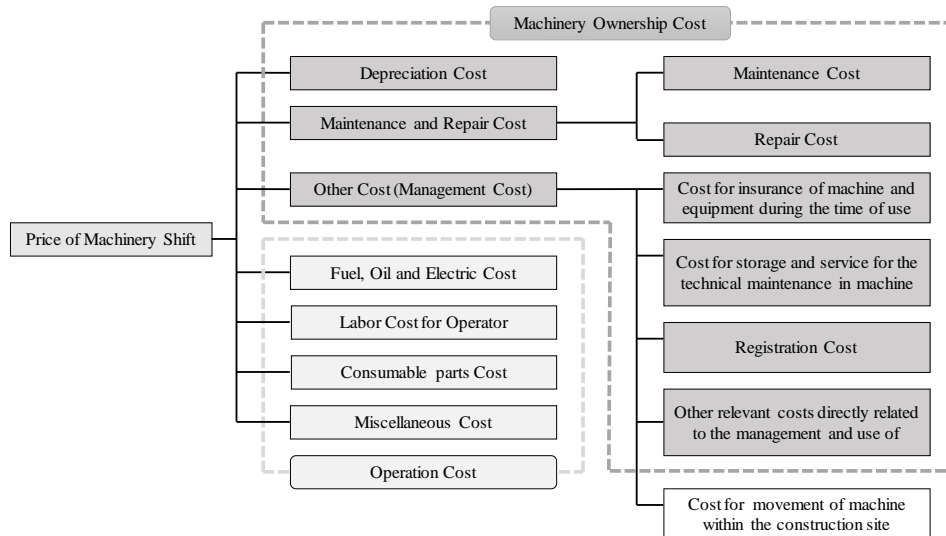
$$C_{CM} = C_{KH} + C_{SC} + C_{NL} + C_{NC} + C_{CPK} \text{ (dong/shift)}$$

In which:

- ♦  $C_{CM}$ : price of machinery shift (dong/shift)
- ♦  $C_{KH}$ : cost of depreciation (dong/shift)
- ♦  $C_{SC}$ : cost of repair (dong/shift)
- ♦  $C_{NL}$ : cost of energy and fuel (dong/shift)
- ♦  $C_{NC}$ : cost of controlling labor (dong/shift)
- ♦  $C_{CPK}$ : other costs (dong/shift)

ii) Structure of Price of Machinery Shift

The structure of machinery shift price is shown in Figure 8-12. The contents of machinery shift price are almost same as the structure in Japanese cost estimation system.



Source: Project team

**Figure 8-12 Structure of Machinery Shift Price**

iii) Cost of Depreciation

The cost of depreciation is calculated by systematic reduction of prime cost of machinery into an operation cost during the period of use. The machine depreciation is calculated in the price of machinery shift. The norms of machine depreciation are determined at each type of machinery by Ministry of Finance, not by MOC. It is higher than Japan because this percentage is calculated based on old machinery.

The cost of depreciation in the price of machinery shift is determined by this formula:

$$C_{KH} = \frac{(G - G_{TH}) \times D_{KH}}{N_{CA}}$$

In which:

- ♦  $C_{KH}$ : cost of depreciation in the price of machinery shift (dong/shift)
- ♦  $G$ : prime cost of machine before tax (dong)
- ♦  $G_{TH}$ : recovery value (dong)
- ♦  $D_{KH}$ : depreciation norms of machine (%/year)
- ♦  $N_{CA}$ : number of working shifts of machine in a year (shift/year)

iv) Cost of Repair

The cost of machine repair includes regular and irregular maintenance and repair of machine during the number working shift of machine in a year in order to maintain and restore the standard operation capacity of machine. The repair cost in the price of machinery shift is determined by this formula:

$$C_{CS} = \frac{G \times D_{SC}}{N_{CA}}$$

In which:

- ♦  $C_{SC}$ : cost of repair in the price of machinery shift (dong/shift)
- ♦  $D_{SC}$ : norm of machine repair (% /year)
- ♦  $G$ : prime cost of machine before tax (dong)
- ♦  $N_{CA}$ : number working shift of machine in a year (shift/year)

In case of Japan, cost of maintenance and repair is calculated by total maintenance and repair cost in the period of use with dividing by the prime cost.

v) Cost of Energy and Fuel

The fuel and energy for one working shift of machine are diesel / gasoline, oil, power, gas or compressed air for operation of the construction machineries. Those items are called main fuel. Other types of fuel are lubricants and transmission oil etc., which are called as auxiliary fuel in a working shift of machine.

The cost of fuel and energy in the price of machinery shift is determined by this formula:

$$C_{NL} = \sum_{i=1}^n D_{NLI} \times G_{NLI} \times K_{Pi}$$

In which:

- ♦  $C_{NL}$ : cost of fuel and energy in the price of machinery shift (dong/shift).
- ♦  $D_{NL}$ : norm for consumption of fuel and energy of  $i^{th}$  type of machine working time in a shift.
- ♦  $G_{NL}$ : price of fuel of  $i^{th}$  type
- ♦  $K_P$ : coefficient of price of auxiliary fuel of  $i^{th}$  type
- ♦  $n$ : number of types of fuel used in a machinery shift.

In case of Japan, this cost of energy and fuel is estimated by separating from machinery ownership cost. However, in case of Viet Nam this cost is included in price of machinery shift.

vi) Cost of Operator

The cost of operator in a working shift of machine is determined based on the number, component, group, machine controlling worker's grade and regulations on labor unit price in management of construction investment cost as guided by MOC and the provincial People's Committee.

The cost of operator in the price of machinery shift is determined by the following formula:

$$C_{NC} = \sum_{i=1}^n N_i \times C_{TLi}$$

In which:

- ♦ N: number of worker as per controlling grade of machine of  $i^{\text{th}}$  type in one machinery shift.
- ♦  $C_{TL}$ : workday unit price of worker's controlling grade of machine of  $i^{\text{th}}$  type
- ♦ n: number and type of worker controlling machine in 01 machinery shift.

In case of Japan, cost of operator is estimated by separating from machinery ownership cost as well as cost of energy and fuel.

vii) Other Costs

The other costs are necessary to ensure the machine operation, which include the insurance of machine and equipment during the period of use, storage and service for the technical maintenance in machine storage, register, and movement of machine within the construction site. The other relevant costs directly related to the use of machine at the construction site are not included in the other cost in the price of construction works and construction estimate.

The other costs in the price of machinery shift are determined by this formula:

$$C_K = \frac{G \times G_K}{N_{CA}}$$

In which:

- ♦  $C_K$ : other costs in the price of machine cost (dong/shift)
- ♦  $G_K$ : norm of other costs of machine (% year)
- ♦ G: prime cost of machine before tax (dong)
- ♦  $N_{CA}$ : number of working shifts in a year (shift/year)

2) Issues Identified by C/Ps and JICA Team

Issues of machinery cost identified by C/Ps and JICA team are shown in Table 8-28.

**Table 8-28 Issues of Machinery Cost Identified by C/Ps and JICA Team**

Issues Identified by C/Ps	
■	The depreciation cost is calculated according to the rate norms promulgated by MOF and the attrition rate is not regulated yet.
■	Financial cost for purchase of construction machinery is not included in machinery shift prices yet.
■	Estimation of machinery shift price is generally applied during all period of use. The short and long term factors (hours, weeks, months, years) are not considered.
■	There are some duplicated costs of machinery cost according to the current calculation of Direct Cost and Indirect Cost (the depreciation cost during transportation of machinery, costs of some machines such as vibrators, welding machines, bar-bending machines, air compressors, etc.)
Issues Identified by JICA Team	
■	Actual working hour per shift is not clear for each machinery.
■	Number of the working day per year is larger than other countries.
■	Number of life years in use is shorter.
■	Prime cost is lower comparing with other data.
■	Formula of depreciation cost is not considered on fixed expense (services expense).
■	Fuel consumption rate is totally smaller than the rate of Japan.
■	Machinery shift cost includes operator cost.

Source: Project team

3) Gaps and Differences of Machinery Cost

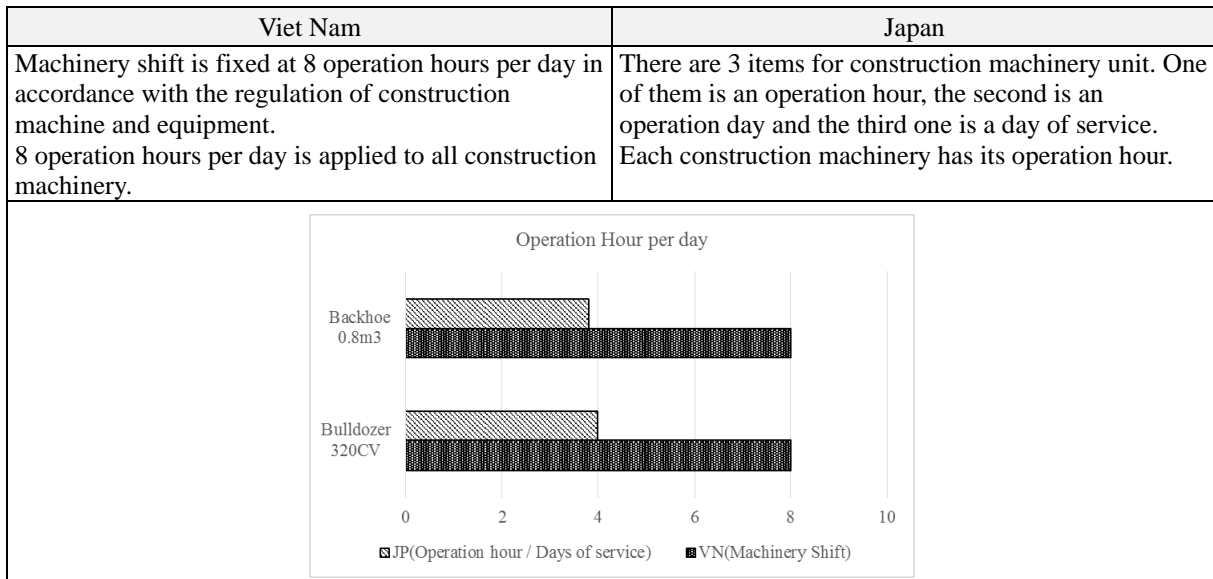
As a result of the comparison of machinery cost of both countries, there are 5 big differences as follows.

- ♦ Concept of machinery shift
- ♦ Number of working day

- ◆ Structure of machinery cost
- ◆ Concept of fixed expense in the depreciation cost
- ◆ Set price of prime cost

i) Concept of Machinery Shift

Each construction machinery generally has a different efficiency and various purposes at a construction site. Even the same type of machinery, the operation hours of the machinery is changed by its capacity because of purposes. Figure 8-13 shows the difference of operation hour of machinery per day of both countries.

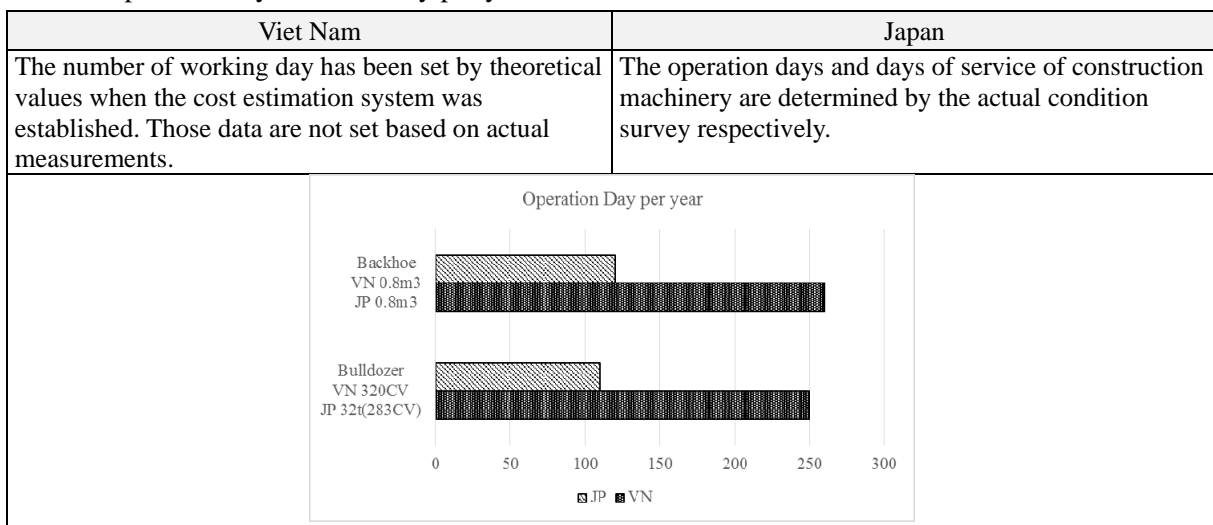


Source: Project team

**Figure 8-13 Operation Hour of Machinery per Day**

ii) Number of Working Day

The annual working days between both countries are totally different due to the concept of machinery shift and setting method of working day. Figure 8-14 shows the difference of operation day of machinery per year of both countries.



Source: Project team

**Figure 8-14 Operation Day of Machinery per Year**

iii) Structure of Machinery Cost

The unit of machinery price is applied to “the machinery shift price”. The concept of machinery price includes the machinery ownership cost and operation cost as shown in Figure 8-12.

iv) Concept of Fixed Expense in the Depreciation Cost

There is no concept of fixed expense and variable expense in the depreciation cost.

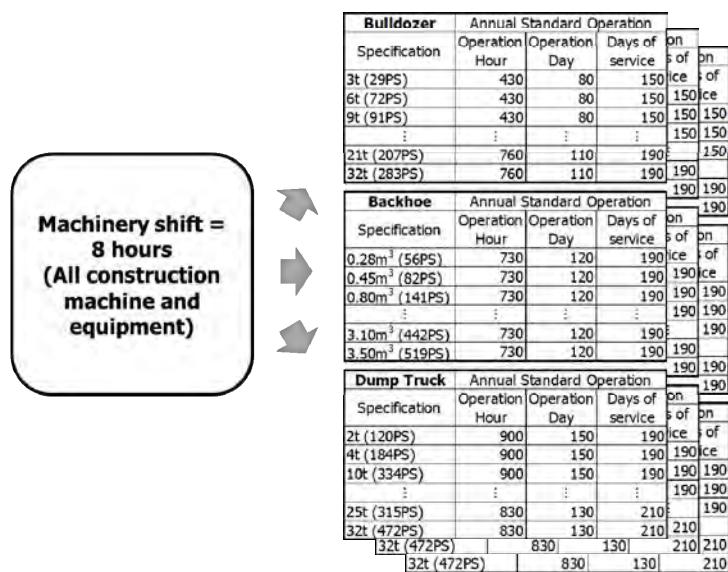
v) Set Price of Prime Cost

The prime cost should be set up based on a new machinery price because it is related to the depreciation cost. Actually, the depreciation cost is calculated according to the rate norms promulgated by MOF based on price of used machinery. Therefore, the current number of life years in use is rather small.

4) Improvement Plan

i) Concept of Machinery Shift and Number of Working Day

An operation hour, operation day and days of service of construction machinery shall be set for each construction machinery based on the result of actual condition survey. Therefore, the actual condition survey is a way to reflect the current situation to the cost estimation system. The concept of operation hour, operation days and days of service is recommended instead of machinery shift concept. The schematic figure for improvement plan of machinery shift is shown in Figure 8-15.



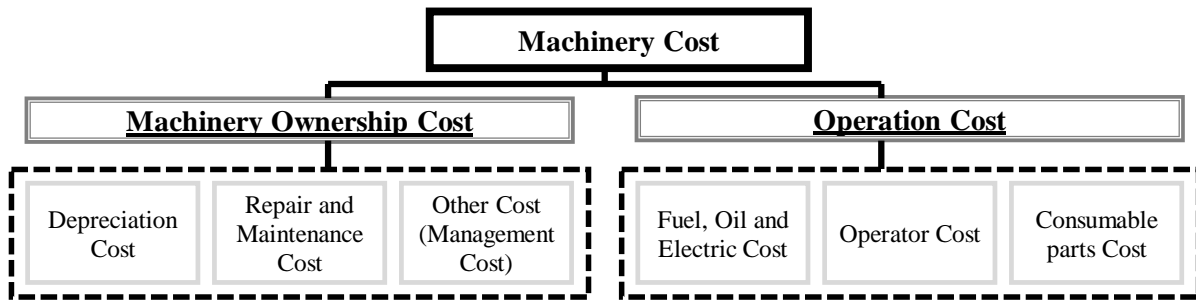
Source: Project team

Figure 8-15 Schematic for Improvement Plan of Machinery Shift

ii) Structure of Machinery Cost

The machinery cost consists of “Machinery Ownership Cost” and “Operation Cost” in case of Japan. Machinery cost estimation can be more accurate through dividing the machinery ownership cost and operation cost, because the operation cost is varied due to the construction condition even in the case of the same machinery use.

The structure of machinery ownership cost and operation cost is shown in Figure 8-16.

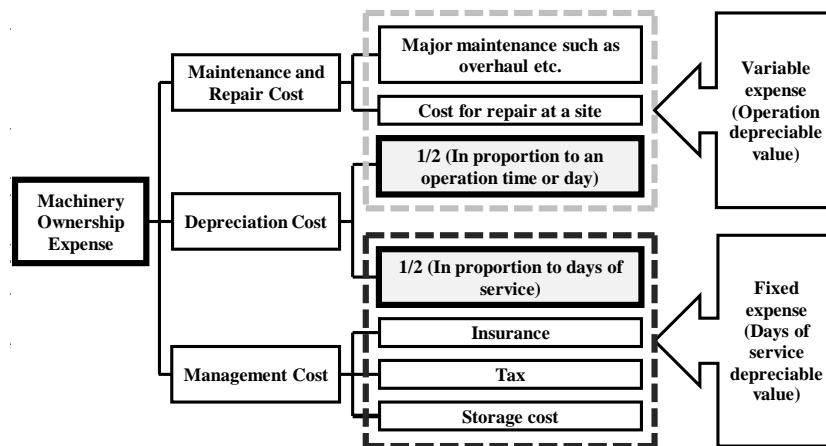


Source: Project team

**Figure 8-16 Structure of Machinery Cost**

iii) Concept of Fixed Expense in the Depreciation Cost

The depreciation cost has to be divided into variable cost and fixed cost because the depreciation cost is incurred even a case that machinery is not operated at a construction site. The cost estimation is reflected to the construction site through dividing the machinery cost. Figure 8-17 explains recommended Structure of Machinery Ownership Cost.



Source: Project team

**Figure 8-17 Structure of Machinery Ownership Cost**

iv) Set Price of Prime Cost

Actual condition survey on construction machinery was not carried out in Viet Nam. Therefore, the prime cost of machinery cost is from the old data. As mentioned before, the prime cost shall be set up based on a new machinery price for the calculation of depreciation cost and it shall be surveyed by the actual condition survey.

v) Actual Condition Survey for Unit Price of Machineries

The machinery price survey is not conducted in Viet Nam. However, the unit of machinery price is applied to “machinery shift”. Therefore, the unit price is not considered the characteristic of each machinery such as standard operation hour, standard operation days as well as days of service per year. Normally, the working time of each machinery is changed due to the characteristic.

Through the study of standard operation hours / days and days of service in order to reflect the characteristic of each machinery, the cost estimation of unit price of machinery shall be improved and reflected to the current condition.

The detailed explanation is stipulated in (10) Actual Condition Survey.

(9) Productivity Rate of Direct Cost

In the CPMU meeting, the Project team prepared the material in 1) current practice, 2) Issues and 3) Improvement plan for earth work, concrete work including form work and rebar work, road pavement work, scaffolding work and finishing work of building work.

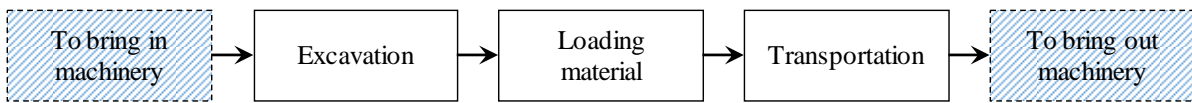
The detailed explanation is in the GLCE.

The items of productivity rate of construction work are different for each construction works because of construction conditions. Here the main improved items of productivity rate are shown below.

It is recommended that the following items shall be incorporated in the norm book in Viet Nam.

i) Flow of construction work

The example of flow of construction is shown in Figure 8-18. The flow of construction indicates the work items contained in the productivity rate in the price schedule.

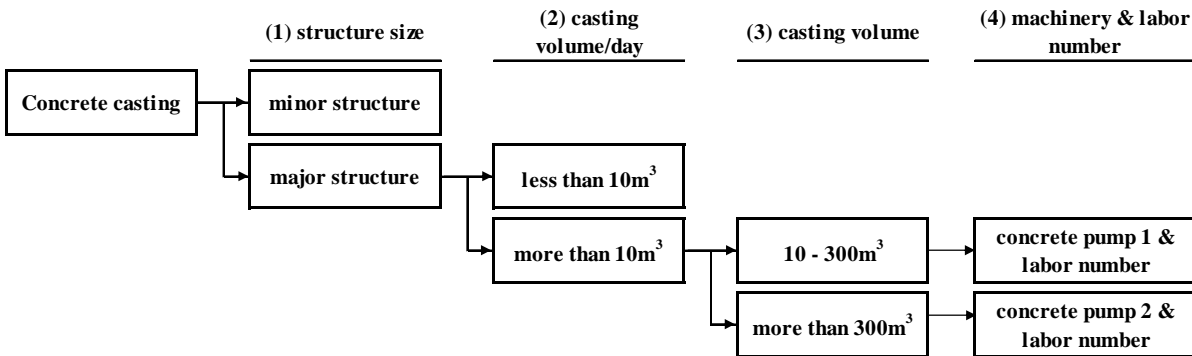


Source: Project team

**Figure 8-18 Example of Flow of Construction (Excavation Works)**

ii) Selection of machinery and construction volume per day choosing applicable conditions in several options

The concept of flow in selection of working items is shown in Figure 8-19. This concept is to choose the suitable working item systematically taking into consideration of the construction condition, construction volume and work efficiency.



Source: Project team

**Figure 8-19 Concept of Flow in Selection of Working Items (Concrete Works)**

iii) Wastage factor of material

The wastage factor of material in the current cost estimation system in Viet Nam is also computed. However, the wastage factor of material shall be updated and improved by the actual condition survey.

iv) Productivity rate

The direct cost consists of the multiplication of unit price and productivity rate. The productivity rates shall be updated periodically by the actual condition survey to reflect the construction market and construction condition at the site.

The data of productivity rate shall be accumulated and the accuracy of cost estimation shall be improved.

Regarding the materials, the materials of small portion for the amount shall be calculated by the



miscellaneous cost rate to simplify the unit price schedule.

v) Unit price schedule

The preparation of format of unit price schedule is recommended to make various unit price schedule for different construction condition based on the same work item.

In addition, in case the machinery unit price schedule, the unit price of machinery shall be changed depending on the working item because the necessary quantity of machinery ownership cost per unit is also different. Accordingly, the unit price depending on the work item is recommended to prepare.

(10) Actual Condition Surveys

The actual condition surveys for unit price of materials, labors and machineries, and productivity rate are recommended in order to improve the cost estimation accuracy and to reflect the current condition at the site.

The cooperation of contractors is necessary to carry out the actual condition survey. MOC shall continue to build the good relationship with contractors with the involvement of Vietnamese construction industry.

On the other hand, it is recommended that the regulations based on the implementation of this survey are necessary to collect the accuracy data to success this actual condition survey.

1) Actual Condition Survey for Unit Price of Materials

Discussed here is the actual condition survey for unit price of materials. The material price survey is conducted by DOC in every district. In the GLCE, the following items are recommended to add the new concept for survey.

i) Categorization of the construction material based on the frequency in use and fluctuation in price

In current practice, there is no category and only one method to check the price. In the GLCE, it is recommended that the materials should be categorized in order to divide based on the frequency in use and fluctuation in price. Dividing three categories and using different survey method to check the price to suppliers are suitable and more efficient.

ii) Survey method and frequency

The survey method such as interview survey, telephone survey and survey by email or fax in written are indicated in the GLCE. The frequency of the survey shall be set up depending on the survey method to be adequate to the current market price.

The example of categorization and survey method of material unit price is shown in Table 8-29.

**Table 8-29 Example of Categorization and Survey Method of Material Unit Price**

Category	Survey method	Frequency	Materials to be surveyed
A	By Interview and / or by telephone.	Every month	High use frequency and/or having wide fluctuation in price
B	By telephone and / or by email or fax in written.	Every month	Average use frequency and/or having narrow fluctuation in price
C	By telephone and / or by email or fax in written.	2 times / year	Low use frequency and/or having no fluctuation in price

Source: Project team

iii) Delivery location and condition

In current practice, the purchase location is not mentioned in the list of material unit price. It will be changed depending on the location due to the transportation cost etc.

iv) Verification of unit material price by third party

It is recommended that the publishing price should be reviewed and verified by MOC. The securing the fairness and transparency is important for the cost estimation.

2) Actual Condition Survey for Unit Price of Labors

Discussed here is the actual condition survey for unit price of labors. The labor salary survey is conducting by DOC in every district. In the GLCE, the following items are recommended to add the new concept for survey.

i) Classification and Definition of Occupations

The type of occupation which is recommended in the GLCE is shown in Table 8-25. The definition of type of occupation is an important element to classify labors by contractors.

Therefore, definition was prepared in the Appendix of GLCE. However, if some labors work several occupations in survey month, one main occupation based on working content in that month shall be decided by the contractor.

ii) Implementing the Venue Survey

The venue survey for checking the wage ledger is necessary and effective. The required document prepared by the contractor should be checked and in case there are some mistakes, it shall be corrected. In addition, in the new system, there are 55 occupations and samples shall be increased than the current system.

iii) Setting Price for Each Occupation

After the interview survey, the submission documents shall be clarified and analyzed by DOC. After setting its price, the verification and decision of price shall be carried out by MOC.

3) Actual Condition Survey for Unit Price of Machineries

Discussed here is the actual condition survey for unit price of machineries. As mentioned above, the survey for unit price of machinery is not conducted in Viet Nam. The data used in present was surveyed many years ago. In the GLCE, the new concept such as operation hours, operation days and days of service instead of machinery shift is recommended to change the unit of machinery price. The explanations of these words are described in the GLCE.

The following survey forms are recommended.

i) Usage Condition

The machinery usage shall be surveyed. The summary of purchase and usage of machinery (capacity, weigh, specification), acquisition record (date, method and price of acquisition, division of new or old and accessory), operation record (number of years in use, number of purchase, main operation location, annual operation hours, annual operation days, annual days of service) and maintenance and repair record are surveyed to the contractors which are selected by independent agency.

ii) Management Condition

Management record shall be surveyed such as location of machinery, storage facility cost, management cost, utility cost (water, gas, electricity etc.), taxes, insurances and number of machinery purchase.

iii) Disposition Record

The disposition record is necessary item for survey in order to calculate the residual value as well as number of years in use. The summary of disposition of machinery (capacity, weigh and specification and etc.), acquisition record (date and price of acquisition), disposition record (date, method and price of disposition, objective of disposition) and maintenance and repair record (annual maintenance and repair cost, cumulated maintenance and repair cost) are surveyed.

4) Actual Condition Survey for Productivity Rate

Discussed here is the actual condition survey for productivity rate. Currently, the survey for

productivity rate is not conducted in Viet Nam. It is recommended that these surveys shall be carried out by an independent agency similar to the survey for machinery unit price.

Working items of all works shall be surveyed, thus, it takes long time to complete because of huge amount of work volume. The detailed schedule of implementation of this survey shall be planned by an independent agency.

In addition, this survey at the site to check the construction condition should be carried out.

The following survey forms are recommended to use for the survey. The explanation of each form is described in the appendix of GLCE.

- i) Form- No.1 Outline of the Project
- ii) Form- No.2 Schematic diagram of construction work
- iii) Form- No.3 Flow chart
- iv) Form- No.4 Construction work states
- v) Form- No.5 Materials
- vi) Form- No.6 Construction machinery
- vii) Form- No.7 Pictures of working states

#### **8.2.4 Draft Circular for Guideline on the Cost Estimation for Construction Packages**

##### **(1) Preparation of Draft Circular**

In the Project, with comparative analysis between cost estimation system in Japan and Viet Nam, differences were picked up and insufficiency in system of Viet Nam was identified. Then, internationally appropriate standard cost estimation system is suggested in the form of Cost Estimation Guideline as the output of the Project.

First, as a review work, cost components in direct cost and indirect cost regulated in circulars in Viet Nam were broken down for comparison analysis and differences, insufficiency and uncertainty in Vietnamese system were analyzed with C/Ps. Based on this study, standard cost estimation system for Viet Nam was suggested as Guideline.

Draft circular for authorizing “Guideline on the cost Estimation for construction packages” was prepared to help MOC expert to make new regulations to improve Cost estimation system.

##### **(2) Draft Circular**

Basing on current practice and recommendations on improvement of Cost Estimation system, a draft Circular was prepared. This draft Circular basically includes almost all improvements to be recommended in this Project, but does not deal with drastic change in current implementation practices. This draft Circular provides the method of new cost estimation basing on the surveys of collecting actual various data in construction projects in Viet Nam in order to reflect renewed estimation mechanism. MOC is recommended to revise detailed requirements timely to fit with actually construction industry time to time.

Draft circular was prepared and agreed in CPMU meeting and submitted to MOC with the covering letter in October 2017.

#### **8.2.5 Training Workshops**

##### **(1) First Training Workshops**

###### **1) Implementation in the First Training Workshops on GLCE- 1**

The first training workshops on GLCE- 1 were held in Hanoi, Da Nang and Ho Chi Minh City in November and December 2016 respectively. Detail is described in Chapter 11. In the presentation materials for the training workshops, the following points were mainly presented and discussed with regard to the cost estimation of indirect cost and the decree / circulars regarding construction cost and price.

- ◆ Purpose and importance of cost estimation
- ◆ Current issues of Vietnamese cost estimation system
- ◆ Importance of execution plan before implementation of cost estimation
- ◆ Appropriate construction period
- ◆ New concept of structure of Indirect cost for Viet Nam
- ◆ Comparison analysis of Indirect cost to international level including Japan
- ◆ Suggestion of new rate of Indirect cost for Vietnamese estimation system
- ◆ Proposal of introduction of expense trend survey to obtain appropriate rate of Indirect cost

2) Discussions after Presentations

Main questions and answers regarding cost estimation are integrated in the following table.

**Table 8-30 Summary of Q&A on Output 3 in First Training Workshops**

Question	Answer
Regarding indirect cost, please give clarification for different expenses in the total investment cost i.e. expenses for registration of fire prevention.	Cost for fire prevention belongs to the total cost of the project; cost for construction license registration, cost for project appraisal, cost for importation of equipment, utility connection cost belongs to other cost items, etc. Those costs cannot be overlapped because according to Circular 09, the payment is made on the basis of the completed actual volume of work.
Are other costs such as personal income tax or other management cost included in bid price?	Other costs should be included in the bid price. The contract price includes all costs to perform the works under contract, to the copyright, the profits of the contractor and all taxes related to the work as prescribed by law.
How to manage material cost? The circular stated that material price should be complied with the market price which will cause difficulty for making appraisal.	DOCs can cooperate with departments of finance to give the price which is as much the same as the market price as possible. In case the material price is different from market price, quotations of materials or price valuation are required.
How to make final settlement for price escalation? Please give more explanation about price of the construction contract.	Cost estimation for one construction contract includes cost for construction, cost for general items and provisional cost. Thus, the cost for price escalation is included in the provisional cost.

Source: Project team

As described in the table above, various questions relevant to cost estimation were issued. They were almost realistic and practical questions which were held and discussed among personnel in charge of actual construction work. Not only Indirect cost, but also direct cost such as material cost were strongly interested in.

(2) Third Training Workshops

1) Implementation in the Third Training Workshop on GLCE

The third training workshops on GLCE were held in Hanoi, Da Nang, Can Tho and Ho Chi Minh City in November and December 2017 respectively similar to the first training workshops.

The training workshops consisted of the cost estimation of infrastructure works in Japan presented by long-term expert and GLCE including generals, indirect and direct cost presented by short-term experts. On the other hand, SACE presented the regulations and domestic project of improvement for cost estimation system.

2) Discussions after Presentations

Main questions and answers regarding cost estimation are integrated in the following table. As a whole, the participants had questions for indirect cost items in this time.

**Table 8-31 Summary of Q&A on Output 3 in Third Training Workshops**

Questions from Participants	Answers of Experts and C/P
<b>General</b>	
Please provide us some standard materials on cost estimation for construction works and guideline for cost estimation of consulting service issued by MLIT.	Those materials are available in books and internet but they are all in Japanese. If you need those materials, we can provide you any time.
What is practice in Japan for management of price escalation?	In Japan, escalation of material. Every year, POs check market price and if the price changes drastically, they will discuss with contractors to decide the amount to compensate them.
What is practice in Japan in case there is initiative for improvement but the initiative has not yet been included in the cost estimation	We will check the initiative on the site to check whether it is effective or not and make decision. If it is a good idea or new machine, we update to the cost estimation.
At present, we all want to estimate cost properly and suitably. However, the final cost is cut to the lowest price during verification no matter what it is suitable or not	Verification is not to lower cost but to examine whether the cost is estimated properly and in accordance with regulation or not.
<b>Indirect Cost</b>	
How to settle the payment for cost for traffic safety?	Cost for traffic safety is paid basing on the contract signed.
Cost for temporary building is not clear enough.	The figure given by JICA experts is only for roughly comparison. Later when working in details we will consider it again. At present, you should follow the current regulation.
Cost for social insurance paid by employer is under which cost item?	It is under overhead cost. We will clarify this cost when revising regulation.
Please clarify the cost for environment impact assessment	This cost is calculated when making total construction investment amount. It is difficult to give a suitable amount for environment impact assessment for each size of projects so we should make cost estimation for that.
As in presentation of JICA's experts, in regard of coefficients to calculate total indirect cost, the rate in Vietnam is lower than in Japan. I think that our cost estimation is old which was developed since 1950s so it is not suitable with the current situation.	The construction cost should include both indirect cost and direct cost so the improvement of cost estimation system should be made synchronously for both direct cost and indirect cost.
How many percentage of overhead cost rate of labor cost for expert's salary?	This information is confidential information of each company so I have no idea for this question. Actually, every year, design companies issue annual report in which rate of labor cost is shown.
<b>Direct cost</b>	
In Japan, unit price for construction materials, labor and machinery is issued for the whole country or for each region or prefecture?	Those costs are issued for each province (47 provinces). For machinery, we have only one price for the whole country.
When manufacturers produce new construction machinery, they will announce productivity of the machinery. So can their information be a basis for contractors to make cost estimation?	Regarding productivity rate of machinery, in Japan, at first MLIT just implements the monitoring and that method will have been common way to implement, MLIT will change old method into new method and conducts the survey to collect productivity rate of the machinery and update data in the guideline.

Source: Project team

As described in the table above, many questions were raised regarding the new cost estimation system which JICA team has proposed. There were many questions about all items; general matters, direct and indirect cost estimation. They were questions of detailed contents and questions from the point of view of introducing the new cost estimation system. It seemed that they had a high level of interest for the new cost estimation system.

### 8.2.6 Compilation of Training Program and Materials

There needs to have proper training programs for dissemination of the study results. The Project team compiled the training program and materials for GLCE with the following contents.

(1) Training Programs

Three options are available to participants intending to have training course, which are as follows.

1) Compact Course: Five hour course for senior staff

Number of participants shall be maximum 50.

2) Full Course: Twenty hour course for any level of staff

Number of participants shall be maximum 50 and may be arranged in 3 day course (seven hours / day) or 5 day course (four hours / day).

3) Special Course: Four hours to eight hours for special issue

Training courses which focus on special issue can be arranged selecting a part of GLCE.

In these training courses, the Project team basically compiles the training materials for GLCE with the following contents.

**Table 8-32 Contents of Training Materials of Guideline on the Cost Estimation  
for Construction Contractor Works**

No	Contents
1	♦ Mechanism of Cost Estimation
2	♦ Component of Direct Cost
3	♦ Estimation Method of Direct Cost
4	♦ Indirect Cost
5	♦ Conclusion and Recommendations
7	♦ Detail Explanation on Common Indirect Cost Items by rate
8	♦ Detail Explanation on Common Indirect Cost Items by piling up
9	♦ Detail Explanation on Site Management Cost Items
10	♦ Survey Form of Unit Price of Material
11	♦ Survey Form of Unit Price of Labor
12	♦ Survey Form of Unit Price of Machinery
13	♦ Survey Form of Productivity Rate

Source: Project team

(2) Trainers for Training Courses

Trainers may be the persons having knowledges on cost estimation as well as experiences on cost estimation as managers and/or staff in implementation of construction works. Academy of Managers for Construction and Cities (AMC) will act as organizer of the training courses.

(3) Training Materials

Materials delivered by organization of training course for participants

- Guideline on Cost Estimation for Construction Packages in Viet Nam (GLCE) formulated in 2017.
- Presentation files used in the course (power point)

- Lecturers need to prepare some real examples (case studies) explaining actual cost estimation implementation if necessary.

Training Program and Materials were compiled and discussed in CMPU meetings, and submitted to MOC in January 2018 with the covering letter.

### **8.3 Recommendation and Lessons Learned**

Through the whole study of Output 3, which is enhancement of current cost estimation methodology in Viet Nam, the following achievements were done with discussions in CPMU more than thirty times with C/Ps.

- ♦ Formulation of “Guideline on the cost estimation for indirect construction contractor works (GLCE- 1)”
- ♦ Formulation of “Guideline on the cost estimation for direct construction contractor works (GLCE- 2)”
- ♦ Draft Circular for authorizing “Guideline on the Cost Estimation for Construction Packages (GLCE)”
- ♦ Dialogues with the relevant construction industries in Viet Nam (VACC, VECAS, and OCAJI) were held and effective comments were collected for formulation of GLCE.
- ♦ Trainings/seminars on GLCE for dissemination were held in November and December 2016, and November and December 2017 at three to four venues in large cities of Viet Nam.
- ♦ Compilation of the training program and materials on GLCE.

In the process of implementation of activities of Output 3 above mentioned, the issues and findings experienced for cost estimation in Viet Nam are as follows.

- ♦ As admitted by C/Ps of MOC, current methods of cost estimation are so obsolete that they do not adjust the present construction works.
- ♦ From contractors point of view, rate of indirect cost is rather low, therefore, it significantly affected assurance of construction management including quality and safety management.
- ♦ Structure of cost for construction works in Viet Nam is very complicated and basis of setting rate of indirect cost is rather vague.
- ♦ Unified surveys regarding cost of materials, labor and machinery are not carried out nationwide. In addition to that, surveys for researching actual rate of indirect cost and overhead by hearing from contractors are not implemented yet.

With considerations of the above achievement and the issues/findings, the following further activities are expected and recommended to the authorities concerned in the future.

- ♦ MOC (AMC and SACE) will implement trainings by using output documents (GLCE etc.) in the year 2018 to 2019 onward for dissemination.
- ♦ When revising regulations incorporating the contents of GLCE, MOC recognizes that training program and materials shall be modified and upgraded so that purposes of trainings will be not only dissemination but also application of new regulations.
- ♦ MOC will commence and formulate construction norm and price system and also related cost estimation system in the Domestic Project by the year 2021.
- ♦ MOC will implement amendment and revision of Circulars (5 and 6) and Decree 32 etc. by the year 2018.
- ♦ After above amendment and revision of Circulars and Decree etc., MOC will prepare adjustment and amendment of Construction Law in accordance with improvement of new cost estimation methodology.

The roadmap for achievement in CCQS Project and future actions was prepared by the Project

team (C/Ps and JICA team). The roadmap for future plan was presented by C/Ps and accepted in the Fifth JSC meeting in October 2017. It was explained again by C/Ps and re-confirmed in the Special meeting for explanation of draft Project Completion Report (PCR) in January 2018.

The roadmap for Output 3 is shown in the table below.

**Table 8-33 Roadmap for Output 3 in CCQS Project and Future Actions**

Items	2015	2016	2017	2018	2019	2020	2021	2022
<b>Output 3 in CCQS Project</b>								
1								
Guideline on Cost Estimation for Indirect Construction Cost (GLCE- 1)								
Guideline on Cost Estimation for Direct Construction Cost (GLCE- 2)								
2								
Submission of GLCE-1								
Submission of GLCE (GLCE-1 + GLCE-2)								
3								
Training Workshops of GLCE								
<b>MOC Plan to disseminate &amp; incorporate GLCE into Regulation</b>								
1								
Trainings for Dissemination of GLCE								
2								
Domestic Project for Improvement of Construction Norm & Price System								
- Formulation of construction norm system								
- Formulation of construction price system								
- Related cost estimation system of construction investment project								
3								
Amendment and Revision of Circulars (5 & 6) and Degrees (32 etc.)								
4								
Proposal for Adjustment and Amendment of the Law on Construction								

Source: Project team

Lessons learned from the experiences in CCQS Project are stated below for future similar projects.

- ♦ In Viet Nam, the latest method for cost estimation should be developed and introduced immediately with referring to international standard methods such as Japan. However, it is necessary to independently develop the best cost estimation methodology suitable for Viet Nam because the cost estimation system varies according to the country's national circumstances, economic development state, market principle and so on.
- ♦ The main fundamental elements of construction cost estimation are direct construction costs (including productivity), indirect cost ratio and overhead rate. It is important and necessary that the MOC conducts surveys for grasp of the latest actual states at the construction sites for setting those values as Viet Nam.
- ♦ Pilot expense trend survey, which is activity out of scope, was implemented as additional task in this project. Through this survey, it was found that new organization dealing with the survey and methodologies to analyse data collected are necessary. State authority has to prepare those entity and methodologies in accordance with implementation of the surveys.

The GLCE formulated in Output 3 enhanced C/Ps capacity in cost estimation in construction works. Subsequently, cost estimation methodology of Viet Nam will approach to the international level.

In case that the GLCE is used to be the guidance for education and training of personnel in charge of cost estimation by state authorities and POs / PMUs, and the contractors under the contract, the Project team considers that the cost estimation system in Viet Nam will be improved.

The Project team believes that CCQS Project has strengthened SACE capability to update guideline like the GLCE as effective guidance.

After all, the Project team hopes that this CCQS Project contributes the development of Viet Nam.



## **Chapter 9 Enhancement of Evaluation of Engineering Capacity of Construction Contractors and Qualification of PMUs (Output 4)**

### **9.1 Outline of Output 4**

Contractors and PMUs (Project Management Units) are key stakeholders in construction management, and their competencies are most influential to secure the quality and the safety of construction. However, evaluation method of construction contractors and qualification of PMUs were neither well designed nor described in regulations. Therefore, Output 4 of the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project) worked toward the improvement of these two items.

The Construction Activity Management Authority (CAMA) developed a construction contractor registration system, grading system and engineer qualification system, incorporating evaluation and grading of contractor's competence and then providing appropriate work opportunities to the companies accordingly to their given grades. The Project team worked with CAMA to identify the problems and issues of the current practice, introduced international practice and drafted the improvement plan of the evaluation method of engineering capacity of construction contractors. Expected outcome of Output 4 is to make it possible for project owner (PO) to select a capable construction contractor and make a contract with reasonable price in construction management.

Regarding the qualification of PMU, the Project team drafted the improvement of regulation on qualification necessary on PMUs with CAMA through the process of review of the function of PMUs on sample projects and the regulation changes.

Policy and activities on Output 4 are shown in the followings.

Policy	Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced. (1) Evaluation method of engineering capacity, grading system and selection mechanism of construction contractors (2) Improvement of regulation on qualification for PMUs
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**Table 9-1 Activities on Output 4**

No.	Activity
4-1	To identify problems on (i) evaluation of construction contractors engineering capacity, (ii) engineer qualification system, and (iii) construction contractor work performance evaluation system
4-2	To commence the construction contractor work performance evaluation system
4-3	To develop evaluation method on engineering capacity of construction contractors
4-4	To prepare draft circular for the evaluation method on engineering capacity of construction contractors
4-5	To carry out trainings / seminars of evaluation method on engineering capacity of construction contractors for dissemination
4-6	To prepare draft of (i) construction contractor grading system and (ii) construction contractor selection mechanism
4-7	To review function of PMU
4-8	To prepare improvement of regulation on qualification necessary for PMUs

Source: Project Design Matrix

As described in the future plan of Table 9-42 in Section 9.3, formulated documents will be disseminated through trainings and applied on trial, and then incorporated in legal regulations.

## 9.2 Activities

### 9.2.1 Identification of Problems on (i) Evaluation of Construction Contractors Engineering Capacity, (ii) Engineer Qualification System, and (iii) Construction Contractor Work Performance Evaluation System

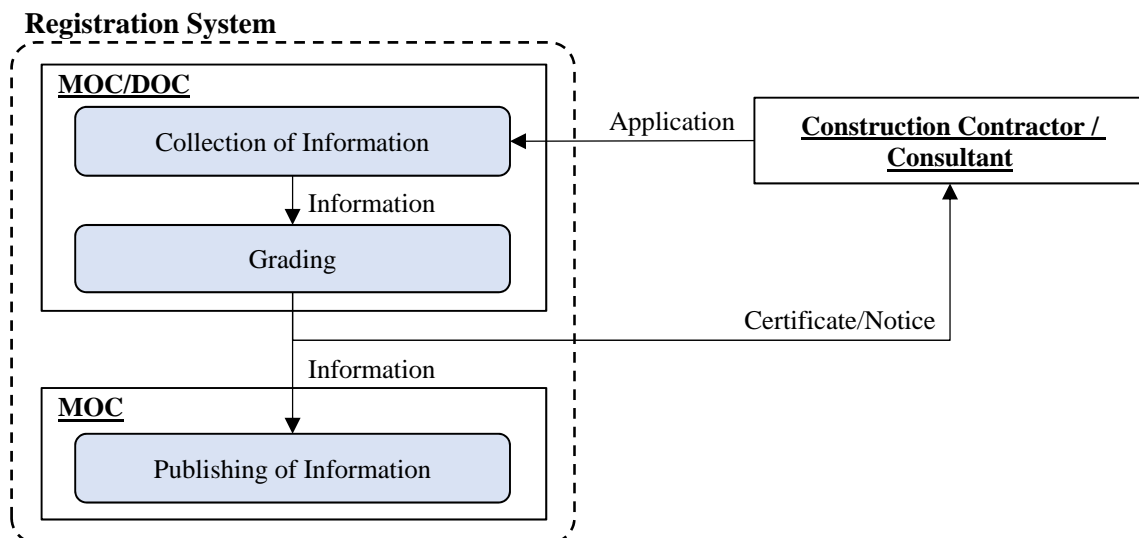
In Viet Nam, it was transition period regarding Construction Law from previous system (No.16/2003/QH11) to current system (No.50/2014/QH13) during CCQS Project. Although some decrees and circulars which conform the current law system were promulgated, it was considered to take a certain time for the enforcement of current regulations until confirming if the expected outcome is obtained by the current regulation.

The current law system (No.50/2014/QH13) was studied to analyze and identify problems of current situation, however, it was also important to study difference or improvement between previous law system and current law system for the purpose of understanding current situation and identifying problems, which are included in this Chapter.

- (1) Evaluation of Construction Contractors Engineering Capacity
  - 1) Current Evaluation Method of Construction Contractors Engineering Capacity
    - i) Registration System
      - a) Outline of Registration System

Improvement plan of construction contractor and consultant registration system was proposed in the Technical Cooperation Project for Capacity Enhancement in Construction Quality Assurance (the Quality TCP). Registration of construction contractor and consultant was prescribed in Circular No.11/2014/TT-BXD which was promulgated after the Quality TCP, and registration of construction contractor and consultant becomes obligation in construction law (No.50/2014/QH13). After that, Circular No.11/2014/TT-BXD was replaced by No.17/2016/TT-BXD.

Flow of the procedure of registration system is shown in Figure 9-1. Registration system is composed with 3 stages of collection of information, grading and publishing of information. To register construction contractors and consultants, applicants submit information for application to Managing Authority (MOC, the Department of Construction: DOC). Managing Authority verifies and evaluates the information in grading. And then evaluated result and collected company's information are sent to MOC and these are shown on web site of MOC.



Source: Decree No.59/2015/ND-CP, Circular No.17/2016/TT-BXD

**Figure 9-1 Flow of Registration Procedure**

Collection of information and publishing of information are shown in this paragraph and grading is shown in next paragraph.

**b) Collection of Information**

Construction contractors and consultants submit company’s information for grading and publishing information to Managing Authority. Application information for grading and publishing of company’s information is prescribed in Decree 59/2014/ND-CP and Circular No.17/2016/TT-BXD as shown in Table 9-2. These information shows business outline, organization structure, business results of construction contractor and consultant and financial information. To evaluate financial conditions of construction contractor and consultant is important to check if they afford to manage an intended size of construction projects with reliableness of quality and safety management and to avoid discontinue of projects by bankrupts of the entities. In previous circular, charter capital was the only application item as financial information, but financial statement of construction contractor and consultant become the item to be included.

**Table 9-2 Information for Application of Company Registration**

No.	Information Necessary and Proof Required	
1	Information of Entity (Name, Telephone, Address )	Files of color photo of original business license or establishment decision
2	Field for applying qualification & grade	
3	Major personnel	
4	Staffs, workers relevant to the field of qualification to be applied	Files of color photo of degrees, certificates, qualifications and employment contract
5	Experiences related to qualification (Max 3 for each field)	Files of color photos of contract and minutes of final acceptance
6	Statement of work flow and Quality management system	Files of color photo of original statement of financial capacity in recent 3 years, certificate of equipment, machineries and software
7	Original statement of financial capacity in recent 3 years	
8	Certificates of equipment, machineries, software	

Source: Circular No.17/2016/TT-BXD

**c) Publishing of Information**

Registration system is to manage contractor’s information so that PO/PMU is able to identify capable contractors for each project. Publishing of Information of construction contractor and consultant is prescribed in Decree 59/2014/ND-CP and Circular No.17/2016/TT-BXD.

- ♦ Information regarding not only contractor but all entities and individuals as well is dealt with a new data system. ID for entities and individuals are employed to identify the entities and individuals among enormous information.
- ♦ Publishing is the final step after grading. Authorities automatically publish information after grading. Currently name of entities, their address and certificated class of each type of work category for registered construction contractors and consultants are placed on MOC’s website after promulgation of Circular No.11/2014/TT-BXD. Information of 5,783 of registered construction contractor and consultant was placed on website of MOC as of September 21<sup>st</sup>, 2017. The number of registered entities was 2,284 on March 10<sup>th</sup>, 2016, so the number of registered entity increased greatly in a year.
- ♦ Based on Circular No.17/2016/TT-XD, contents of publicity are revised to names, address of head office; legal representatives; establishment decision; business license; charter capital; number of individuals capable for major job titles; quality management system; some typical completed and on-going projects, scale of projects, participation role, jobs, commendation; financial statements of recent 3 years; evaluation score for construction contractor.

**d) Comparison of Previous and Current System regarding Registration System**

Overall chronological improvements regarding registration system in Viet Nam are as follows. Table 9-3 also shows the detailed comparison between current law system and previous

system regarding company's registration system.

- ♦ Even though 2-grade for a couple of entities qualification was applied in Decree 16/2005/ND-CP, each project owner judged the grade of contractor for each construction package at tender.
- ♦ Based on the Decision No. 02/2008/QD-BXD dated on February 20, 2008, the Construction Activity Management Department (CAMD) of MOC started to have construction related company registration system. This system had two database for contractors and consultants. However, this registration system was not compulsory for each company and information collected was limited since not all company applied this registration system.
- ♦ Based on Circular No. 11/2014/TT-BXD, registration of entities became obligation and MOC centralized registration process and started to publish company information in MOC website. Each project owner was able to find a company information such as grades and type of works included in the web site.
- ♦ Based on the current construction law (No.50/2014/QH13) and Decree No.59/2015/ND-C, CAMA unified entities qualification and individual qualification systematically by using 3 grade system and also prepared E-government program, which is a unified database system to operate registration, grading of entities and engineer's qualification.
- ♦ Since Circular No. 11/2014/TT-BXD did not match the registration item in latest Decree No.59/2015/ND-CP, Circular No. 17/2016/TT-BXD was promulgated to conform to Decree No.59/2015/ND-CP, and registration system was linked with grading system.

**Table 9-3 Comparison of Registration System for Entities between Previous and Current Law System**

	Previous System	Current System
Regulation	<ul style="list-style-type: none"> <li>• Circular No.11/2014/TT-BXD</li> <li>• Decree No.15 /2013/ND-CP</li> </ul>	<ul style="list-style-type: none"> <li>• Construction Law (No.50/2014/QH13)</li> <li>• Decree No.59/2015/ND-CP</li> <li>• Circular No.17/2016/TT-BXD</li> </ul>
Classification	<ul style="list-style-type: none"> <li>◆ <u>Grade</u> <ul style="list-style-type: none"> <li>• Level 1 (all class of project)</li> <li>• Level 2 (only class II, III and IV)</li> </ul>           Grade for construction company was given in each bidding by each PO            From 2014 (Circular 11), MOC shows grade for each construction company on their website         </li> <li>◆ <u>Type of Scope (8)</u> <ul style="list-style-type: none"> <li>• Design review</li> <li>• Testing</li> <li>• Construction supervision</li> <li>• Quality inspection</li> <li>• Survey, design, construction for works at special grade, grade I, II by state budget.</li> <li>• FS preparation</li> <li>• Project management</li> <li>• Planning design</li> </ul> </li> <li>◆ <u>Type of Field (5)</u> <ul style="list-style-type: none"> <li>• Civil construction work</li> <li>• Industrial construction work</li> <li>• Technical infrastructure construction work</li> <li>• Transport construction work</li> <li>• Agriculture and rural development construction work</li> </ul>           Project Owners are required to select contractors/consultants who are listed in MOC's website to do above jobs.         </li> </ul>	<ul style="list-style-type: none"> <li>◆ <u>Grade (3)</u> <ul style="list-style-type: none"> <li>• Class 1 (all class of project)</li> <li>• Class 2 (Class II, III and IV project)</li> <li>• Class 3 (Class III and IV project)</li> </ul> </li> <li>◆ <u>Type of Scope (9)</u> <ul style="list-style-type: none"> <li>• Construction survey</li> <li>• Construction planning consultancy (this scope does not have classification of field)</li> <li>• Construction design and design review</li> <li>• Project management consultancy</li> <li>• Construction</li> <li>• Construction supervision</li> <li>• Inspection</li> <li>• Construction cost management Consultancy</li> </ul> </li> <li>◆ <u>Type of Field (6)</u> <ul style="list-style-type: none"> <li>• Civil construction work</li> <li>• Industrial construction work</li> <li>• Technical infrastructure construction work</li> <li>• Transport construction work</li> <li>• Agriculture and rural development construction work</li> <li>• Security and Defense</li> </ul> </li> </ul>

	Previous System	Current System
Responsible Organization	<ul style="list-style-type: none"> <li>• MOC: state own companies, semi-public organizations,</li> <li>• DOCs and MOC: private companies</li> </ul>	<ul style="list-style-type: none"> <li>• MOC: Class 1</li> <li>• DOC: Class 2 and Class 3</li> </ul>
Procedure	<ul style="list-style-type: none"> <li>• Submission of documents</li> <li>• Evaluation</li> <li>• Announcements</li> </ul>	<ul style="list-style-type: none"> <li>• Submission of documents</li> <li>• Evaluation</li> <li>• Automatic Announcements</li> </ul>
Main Information for Registration	<ul style="list-style-type: none"> <li>• Establishment decision</li> <li>• Certificate of enterprise registration</li> <li>• Charter capital</li> <li>• Number of employees having high-level of qualifications</li> <li>• Construction testing laboratory</li> <li>• List of the typical projects in which organization engaged over the last 3 years</li> <li>• The core construction fields of the organization</li> <li>• Award-winning constructions</li> <li>• Project in which the organization committed violations</li> <li>• Self-assessment of the organization's capability and rating according to regulations and standards</li> </ul>	<ul style="list-style-type: none"> <li>• Name of representative person</li> <li>• Establishment decision, Business license</li> <li>• Financial figures of recent 3 years</li> <li>• Number of persons eligible for key titles</li> <li>• Quality management system</li> <li>• Certificates of equipment, software</li> <li>• Number of typical projects of each kinds (completed and ongoing)</li> </ul>
Renewal	◆ <u>Update</u> : yearly or 10 days after changes, updates	◆ <u>Term of validity</u> : annual update or 15 days after changes, updates

Source: Project team

## ii) Grading System

Example of the grading system in Japan was introduced in the Quality TCP. Grading system is regulated in Decree No.59/2015/ND-CP which was promulgated after the Quality TCP.

Construction entities need to obtain the certificates of eligibility for construction activities. 9 types of certificates for construction activities are prescribed in the decree. List of certificates is prescribed in the decree as shown in Table 9-4. All of the certificates have 3 classes of Class I, II and III, and certificate of Class I is issued by MOC and those of Class II and III are issued by DOC. Application information for grading is stored in the information system. Certificate is issued and sent to construction entities after grading. Flow for issuance of the certificate is shown in Figure 9-1. The certificates of eligibility for construction activities of the construction entities are valid for 5 years.

**Table 9-4 List of Certificate for Construction Practice**

List of Certificate	
Construction Survey	Construction
Construction Planning Consultancy	Construction Supervision
Construction Design and Design Review	Inspection
Project Management Consultancy	Construction Cost Management Consultancy

Source: Decree No.59/2015/ND-CP

Requirements for certificate for construction are shown in Table 9-5. Requirements for certificates are composed with number of qualified staffs, number of professional staffs and business result. Information of financial capacity, implementation procedure and quality management system is submitted as application information.

**Table 9-5 Requirement for Construction Contractor at Class**

No.	Criteria	Class I	Class II	Class III	Score
1	Number of Site managers	05 score/person	7,5 score/person	15 score/person	0 - 15
2	Number of managers for each type of works	02 score/person	02 score/person	02 score/person	0 - 15
3	Number of persons with suitable expertise	01 score/person	1,25 score/person	2,5 score/person	0 - 10
4	Number of safety officers	01 score/person	2,5 score/person	05 score/person	0 - 05
5	Workers with skill certificates	< 30 persons	< 20 persons	< 5 persons	0
		≥ 30 persons	≥ 20 persons	≥ 5 persons	15
6	Work implementing procedure and quality management system	There is no procedure suitable with job content	There is no procedure suitable with job content	There is no procedure suitable with job content	0
		There is procedure suitable with job content	There is procedure suitable with job content	There is procedure suitable with job content	05
		Procedure is detailed; ISO 9001 is available	Procedure is detailed; ISO 9001 is available	Procedure is detailed; ISO 9001 is available	10
7	Ability for mobilization of major machineries	Not able	Not able	Not able	0
		Able	Able	Able	10
8	Number of completed jobs/contracts	Not yet performed at least 1 grade-I structure or 2 grade-II structures of the same kind as main contractor	Not yet performed at least 1 grade-II structure or 2 grade-III structures of the same kind as main contractor	Not required	0
		Has performed at least 1 grade-I structure or 2 grade-II structures of the same kind as main contractor	Has performed at least 1 grade-II structure or 2 grade-III structures of the same kind as main contractor	Not required	10-15 (1)
9	Entity's finance capability	Loss in business in recent 3 years (up to applying time)	Loss in business in recent 3 years (up to applying time)	Loss in business in recent 3 years (up to applying time)	0
		No loss in business in recent 3 years (up to applying time)	No loss in business in recent 3 years (up to applying time)	No loss in business in recent 3 years (up to applying time)	05
10	Total score	< 75	< 75	< 70	Fail
		≥ 75	≥ 75	≥ 70	Pass

Note: (1) Entities who pass the criteria on number of completed jobs/contracts will get 10 scores; each extra job/contract will get 1 more score, but total score shall not exceed 15 scores.

Source: Circular No.17/2016/TT-XD

Grade of construction work is classified into 5 grades, such as Special, Grade I, Grade II, Grade III and Grade IV. Construction contractors who have Class I certificate are able to participate in all grade of bid for construction works that conform to their certificate. Construction contractors who have Class II or III certificate are able to participate bid for constructions work that conform to their certificate and lower grade with their certificate class

(Example: If a construction contractor has class III certificate, they are able to participate bid for construction work of grade III and IV). Extract of grade for construction work is shown in Table 9-6. As shown in Table 9-6, grade standard in Viet Nam is based on scale of structure while in other countries such as Japan and Singapore grade is divided by construction package amount (bid size) at each type of works for which a contractor is able to apply.

**Table 9-6 Extracts of Grade for Construction Work**

Types of Works		Grade				
		Special	I	II	III	IV
1.1.2.1. General hospitals, local, central specialty hospitals (central hospitals not below class I)	Total number of beds/hospital	> 1,000	500 - 1,000	250 - 500	< 250	
1.3.1.1. Water plants, clean water treatment works (including sludge treatment plants)	Total capacity (thousand m <sup>3</sup> /day and night)		≥ 30	10 - 30	< 10	
2.5.1. Road bridges: according to criteria (a, b); 2.5.2. Railway bridges: according to criteria (b, c) (Bridges with application of new construction technologies (main structure construction technologies applied in Viet Nam for the first time) shall be increased one level after being classified according to this table.)	d) Largest span (m)	> 150	100 - 150	42 - 100	25 - 42	≤ 25
	b) Height of bridge support columns (m)	> 50	30 - 50	15 - 30	6 - 15	< 6
	d) Largest span (m)	> 100	50 - 100	25 - 50	< 25	

Source: Circular 03/2016/TT-BXD

MOC promulgated Circular No.17/2016/TT-XD on grading system which is conform to Decree No.59/2015/ND-CP. Grading system link with registration system after promulgation of the circular. Table 9-7 shows comparison of grading system for entities between previous and current law system. Main points are follows:

- ♦ 3 grade system (Class 1 to Class 3) for every type of scope and field is applied in the current law system.
- ♦ In current system, evaluation is done by government (MOC or DOC) with a unified standard by using information accumulated in registration while project owner had to judge the grade on each project in previous system.
- ♦ Evaluation item newly incorporated is deficit in finance, while operation process described above was improved.

**Table 9-7 Comparison of Grading System for Entities between Previous and Current Law System**

	Previous System	Current System
Regulation	Construction law (No.16/2003QH11), Decree No.12/2009/ND-CP	Construction Law (No.50/2014/QH13), Decree No.59/2015/ND-CP, Circular No.17/2016/TT-XD
Responsible Organization	Certificate and license are not issued. Each PO set requirements on each project based on level of each project. POs have to judge the grade based on proposals/bids during tendering project by project.	<ul style="list-style-type: none"> <li>• MOC: Class 1</li> <li>• DOC: Class 2 and Class 3</li> </ul>
Classification (Same as Table 9-3)	<ul style="list-style-type: none"> <li>◆ Grade (2)</li> <li>◆ Type of Scope (6)</li> <li>◆ Type of Field (5)</li> </ul>	<ul style="list-style-type: none"> <li>◆ Grade (3)</li> <li>◆ Type of Scope (9)</li> <li>◆ Type of Field (6)</li> </ul>
Procedure	<ul style="list-style-type: none"> <li>• Submission of application</li> <li>• Issuance of Certificate:</li> </ul>	<ul style="list-style-type: none"> <li>• Submission of application</li> <li>• Issuance of Certificate</li> </ul>
Evaluation Item	<ul style="list-style-type: none"> <li>◆ Staff <ul style="list-style-type: none"> <li>• Number of qualified engineers</li> <li>• Number of technical workers</li> </ul> </li> <li>◆ Equipment <ul style="list-style-type: none"> <li>• Equipment for construction work</li> </ul> </li> <li>◆ Quality management system</li> </ul>	<ul style="list-style-type: none"> <li>◆ Staff <ul style="list-style-type: none"> <li>• Number of qualified engineers</li> <li>• Number of technical workers</li> </ul> </li> <li>◆ Equipment <ul style="list-style-type: none"> <li>• Equipment for construction work</li> </ul> </li> <li>◆ Quality management system</li> </ul>

	Previous System	Current System
	<ul style="list-style-type: none"> <li>◆ Pass records</li> <li>• Number of completed projects of similar kind and grade</li> </ul>	<ul style="list-style-type: none"> <li>◆ Pass records</li> <li>• Number of completed projects of similar kind and grade</li> <li>◆ Financial                             <ul style="list-style-type: none"> <li>• Deficit</li> </ul> </li> </ul>
Renewal	It is not prescribed.	◆ Term of validity: 5 years

Source: Project team

### iii) Selection Mechanism

Since selection mechanism is a scope of the Ministry of Planning and Investment (MPI), selection procedure is regulated in Law on bidding (No.43/2013/QH13) and Decree No.63/2014/ND-CP which are prepared by MPI. Thus, evaluation method of construction contractors engineering capacity needs to be planned to incorporate into the existing selection method.

6 types of selection forms (see Table 9-8) are prescribed in the law and the decree, and these selection forms are categorized by procurement type and technical level. 2 types of bidding forms of open bidding and limited bidding are included in these forms.

4 types of bidding method are prescribed in the decree (see Table 9-9), and these bidding methods are categorized by procurement type and technical level.

**Table 9-8 Types of Selection Forms in Viet Nam**

No.	Form of Selection	Objectives
1	Open Bidding	<ul style="list-style-type: none"> <li>• Except for following cases</li> </ul>
2	Limited Bidding	<ul style="list-style-type: none"> <li>• Highly technical requirements or technical peculiarities for which only a limited number of tenderers are capable</li> </ul>
3	Direct Appointment of Contractor	<ul style="list-style-type: none"> <li>• Urgent cases</li> <li>• Nation secret and national sovereignty</li> <li>• Relocation of technical infrastructure works managed directly by specialized unit</li> </ul>
4	Competitive Quotation	<ul style="list-style-type: none"> <li>• Limitation value</li> <li>• Simple works which have had the approved construction design</li> </ul>
5	Direct Procurement	<ul style="list-style-type: none"> <li>• Similar goods of a same project, same procurement estimate</li> <li>• Similar goods of other project, other procurement estimate</li> </ul>
6	Self-Implementation	<ul style="list-style-type: none"> <li>• In case organizations directly managing and using such bidding packages have technical and financial capability, and experiences satisfying requirements of bidding packages</li> </ul>

Source: Project team

**Table 9-9 Types of Bidding Method in Viet Nam**

No.	Bidding Method	Objective
1	One-Stage, One Envelop Method	Applied for bidding package of <u>non-advisory service provision</u> ; bidding package of procurement of goods, construction and installation, <u>mixture content with small scale.</u>
2	One-Stage, Two Envelop Method	Applied for bidding package of provision of advisory services, <u>non-advisory services</u> , goods procurement, construction and installation, <u>mixture content.</u>
3	Two-Stage, One Envelop Method	Applied for bidding package of procurement of goods, construction and installation, <u>mixture content with big scale and complex nature.</u>
4	Two-Stage, Two Envelop Method	Applied or bidding package of goods procurement, construction and installation, <u>mixture content with new, complex and particular techniques and technologies.</u>

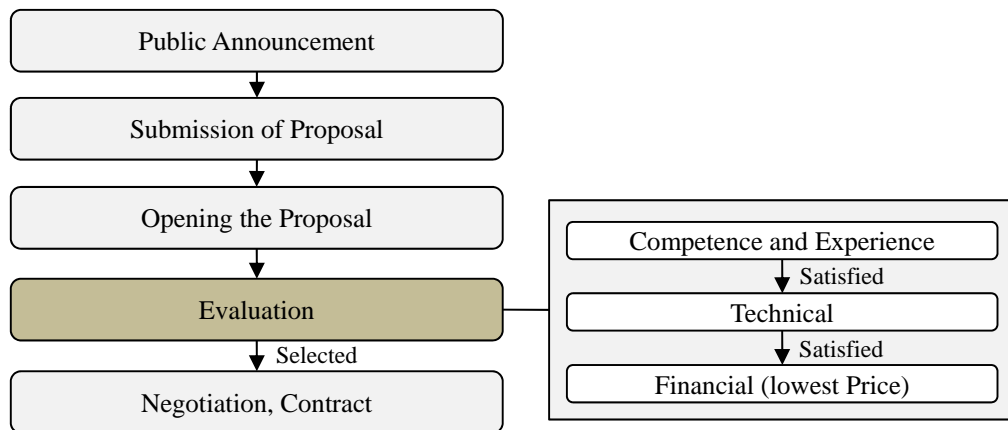
Source: Project team

4 types of flows of the bidding procedures for each bidding method are shown from Figure 9-2 to Figure 9-5. These bidding methods are applied for not only construction project but also other types of procurement. If a technical proposal passes minimum standard of the requirements, selection is resulted only by bid price in all bidding method except one-stage



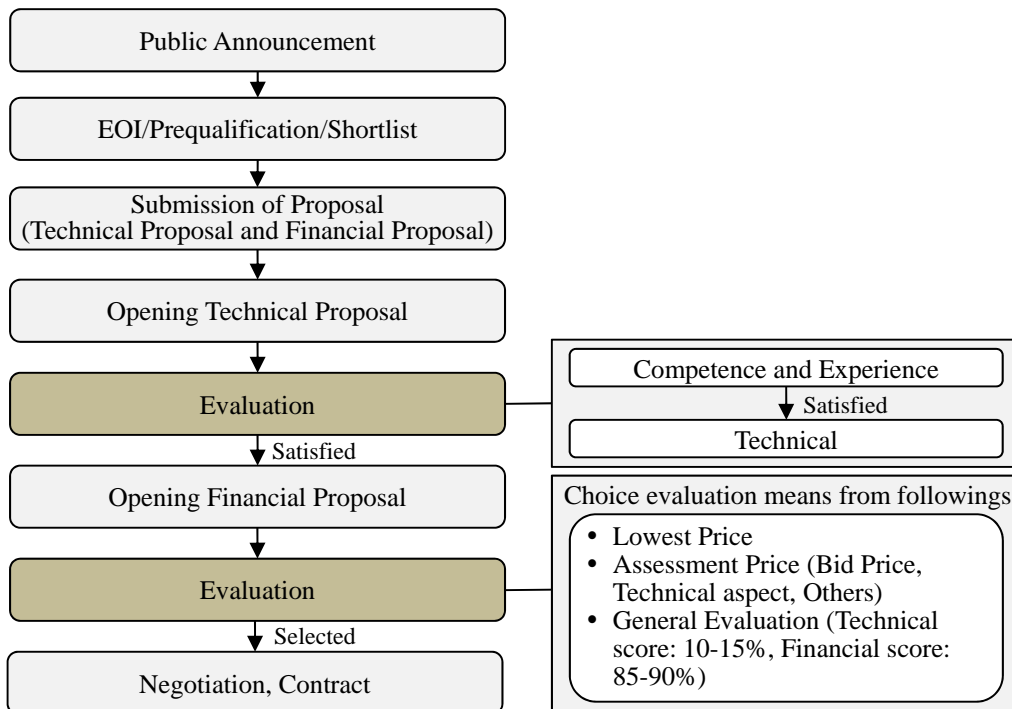
two-envelop method. In one-stage two-envelop bidding method, an evaluation means is chosen from 3 kinds, such as low price evaluation, assessment price evaluation and general evaluation. Equation for each evaluation means are shown in Table 9-10. Score of assessment price evaluation is calculated based on bid price, technical aspects and others. Score of general evaluation is calculated based on technical proposal and financial proposal, and weight range of technical score is 10-15% and that of financial score is 85-90%. Overall, weight of technical score on the bidding method is small and not enough for contractors to pay attention to technical aspects.

One-stage two-envelop method is the most often used in Viet Nam. Assessment price evaluation and general evaluation are able to evaluate not only bid price but also technical proposal. But most of project owners do not use these evaluation means, since they do not have sufficient skills to set scoring method for these evaluation means.



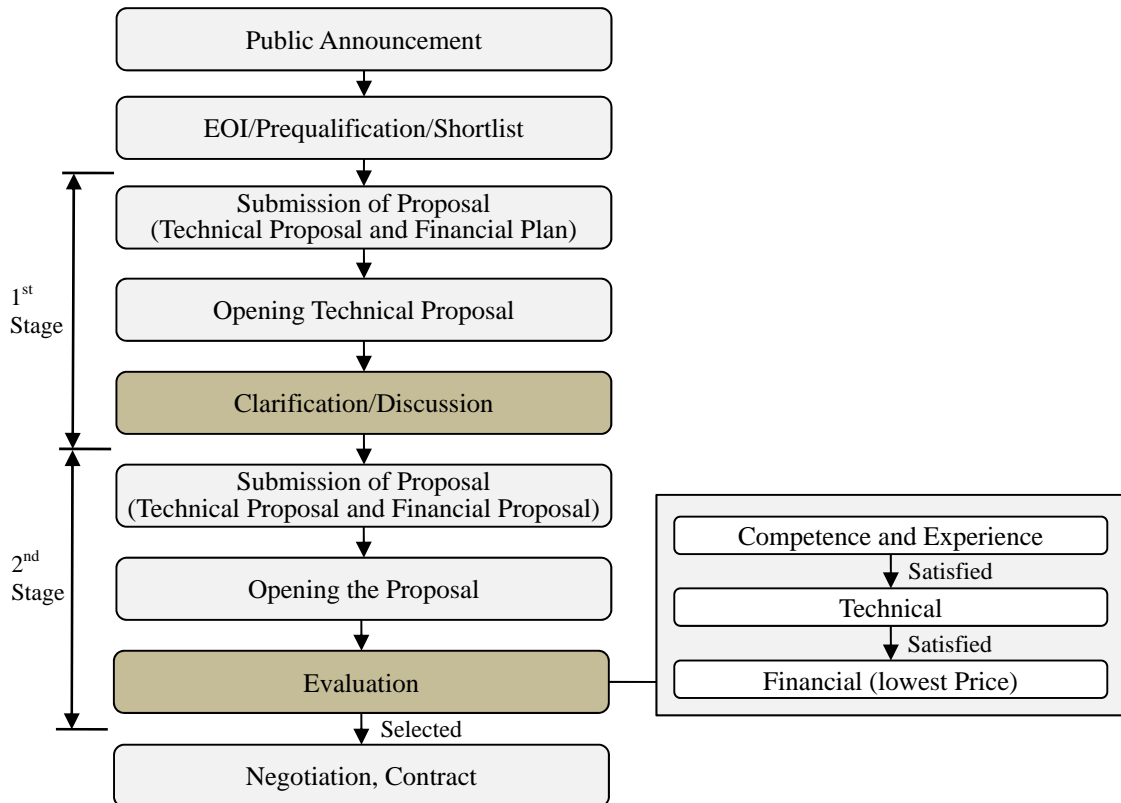
Source: Project team

**Figure 9-2 Bidding Process of One-Stage, One-Envelop Method**



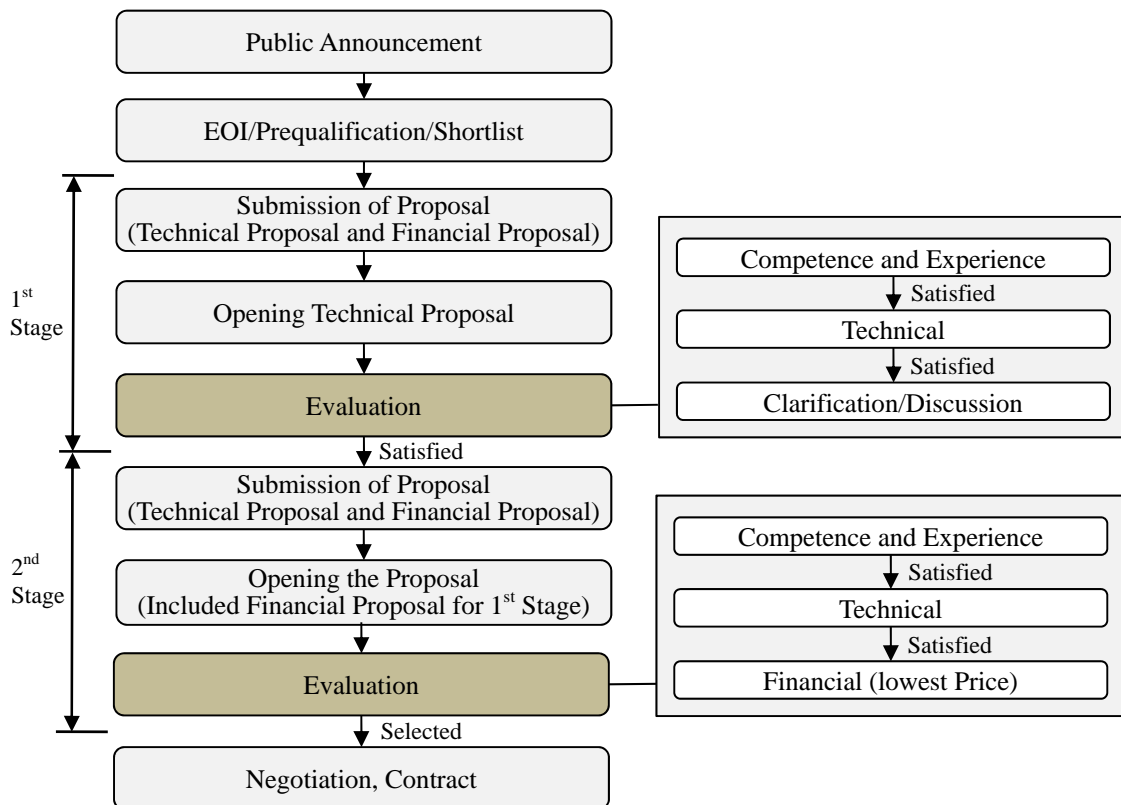
Source: Project team

**Figure 9-3 Bidding Process of One-Stage, Two-Envelop Method**



Source: Project team

**Figure 9-4 Bidding Process of Two-Stage, One-Envelop Method**



Source: Project team

**Figure 9-5 Bidding Process of Two-Stage, Two-Envelop Method**

**Table 9-10 Evaluation Means in Bidding in Viet Nam**

Means	Equation for Evaluation
Lowest Price	$G = (\text{bid price} \pm \text{correction} \pm \text{rectification}) - \text{discount (if any)}$
Assessment Price	$G_{DG} = G \pm \Delta_G + \Delta_{UD}$ $G = (\text{bid price} \pm \text{correction} \pm \text{rectification}) - \text{discount (if any)}$ $\Delta_G$ is the amount that all aspects are converted to same standard for whole project life cycle, including: <ul style="list-style-type: none"> <li>- Cost for operation, maintenance</li> <li>- Cost for interest (if any)</li> <li>- Schedule</li> <li>- Quality</li> <li>- Other aspects (if any)</li> </ul> $\Delta_{UD}$ is the amount to be added for those who are not given preferential treatments
General Evaluation	Combine score <sub>evaluating</sub> = $K \times \text{Technical Score}_{\text{evaluating}} + G \times \text{Price Score}_{\text{evaluating}}$ Technical Score <sub>evaluating</sub> is the score determined at technical evaluation Price Score <sub>evaluating</sub> = $(G_{\text{lowest}} \times (100 \text{ or } 1000)) / G_{\text{evaluation}}$ <ul style="list-style-type: none"> <li>- <math>G_{\text{lowest}}</math> is the lowest bid price after correction and rectification, deducting discount among bids which are able to be price evaluated.</li> <li>- <math>G_{\text{evaluation}}</math> is bid price after correction and rectification, deducting discount among bid which is being evaluated.</li> </ul> K: weight of technical score specified on combination scale (from 10 to 15%) G: weight of price score specified on combination scale (from 85 to 90%) $K + G = 100\%$

Source: Project team

## 2) Issues and Problems

### i) Registration System

Current registration system seems to be designed systematically and well match to grading system and qualification systems for both engineers and entities. However, there recognized still some items to be improved.

Database and ID system to be established are beneficial for data management of entities and individual information. Attention should be paid to check if this process is correctly operated and all contractors apply their information without problem.

Application information for the previous registration system was not sufficient to evaluate capacity of contractors and it was hard to evaluate financial aspect or establish a method to analyze financial aspect of companies. To deal with this problem financial information is included as required information for registration in Circular No.17/2016/TT-XD.

Current registration system is basically for main contractors, and registration is not required for any contractors to do subcontracting work. Further discussion needs to be conducted on this point.

For the proof of the contractor's experience, only the number of packages and their grade is collected. There should be further information to be collected for the evaluation of actual performance and quality.

In addition, classification of construction grade and their definition have not been improved after firstly employed in 2003. It is recommended to check if the current classification fit actual construction practice.

Issues and problems on the registration system are shown in Table 9-11.

**Table 9-11 Issues/Problems on Registration System**

Issues/Problems
- To check if new system will be operated without problem
- The necessity for subcontractor to register itself need to be discussed
- Past record is counted just by the number of project
- To check if the current classification of construction fit actual practice

Source: Project team

ii) Grading System

CAMA and DOC operate the grading system of entities. Evaluation method for grading is described in Circular No.17/2016/TT-XD.

Work performance evaluation is not integrated in grading system, since work performance evaluation system is not introduced yet.

Financial capacity is one of evaluation item in the current evaluation method in grading, but only deficit is applied as evaluation item. CAMA does not have techniques to verify financial capacity. Major issues/problems on the grading system are shown in Table 9-12.

There are some items in which requirements are not clear. A requirement regarding management specifies ISO 9001 or another, however there is not detailed explanation about 'another'. The same thing is recognized about the evaluation of equipment.

Further improvements, which are identified in comparing to the grading system of developed countries, are described later in this Chapter.

**Table 9-12 Issues/Problems on Grading System**

Issues/Problems
- Work performance evaluation is not applied for grading system
- CAMA does not have technique for verification of financial capacity
- Unclear evaluation item in management, equipment

Source: Project team

iii) Selection Mechanism

Lowest price means is applied for bidding on the final stage of evaluation in most of bidding method. Bidding method which puts emphasis on financial evaluation obstruct i) enhancement of technique and introduction of new technology, ii) improvement of quality and safety management, and iii) restriction of insufficient bid.

There are 3 types of evaluation means for one-stage two-envelope method. But most of project owners choose lowest bid means, since they does not have sufficient skill to set scoring method for assessment price evaluation. Issues and problems on the selection mechanism are shown in Table 9-13.

**Table 9-13 Issues/Problems on Selection Mechanism**

Issues/Problems
- Weight of technical score on evaluation is small.
- Project owners do not have sufficient skill to set scoring method for assessment price evaluation and general evaluation.

Source: Project team

(2) Engineer Qualification System

1) Existing Engineering Qualification System

MOC had enforced 4 categories of engineer qualifications before start of the Quality TCP.

However, to cope with rapid growth in planning, construction, supervision and maintenance technologies, MOC had tackled the enhancement of engineer qualifications. Thus, improvement of examination system, operation of training courses, an introduction of continuous professional development system and introduction of grading of engineer qualifications for construction supervisor were proposed in the Quality TCP. Qualification system was revised and regulated in Decree No.59/2015/ND-CP which was promulgated after the Quality TCP.

7 categories of engineer qualifications and 1 category of job title are prescribed in the decree as shown in Table 9-14. Each category of engineer qualifications and job titles has 3 classes. Requirement for examination of qualification/job title for construction supervision, construction safety, construction site manager and project manager for each class are shown in Table 9-15.

**Table 9-14 List of Qualification and Job Title on Decree No.59/2015/ND-CP**

Qualification		Job Title
Construction survey practice	Construction inspection practice	Construction site manager
Construction planning practice	Construction valuation practice	
Construction design practice	Project management practice	
Construction supervision practice		

Source: Decree No.59/2015/ND-CP, Decree No.42/2017/ND-CP

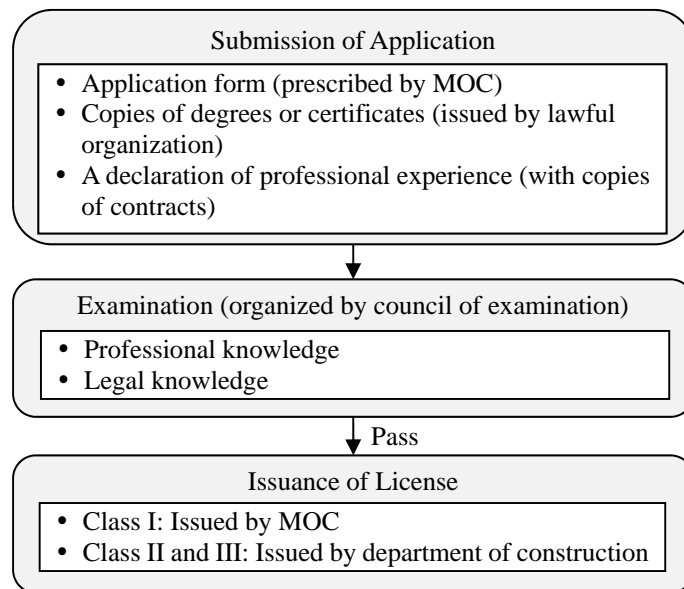
**Table 9-15 Requirement for Qualifications and Job Title**

Qualification	Class I	Class II	Class III
General Requirement	<ul style="list-style-type: none"> <li>Bachelor's degree with appropriate major in conformity with application for license</li> <li>7 years experiences in conformity with application for license</li> </ul>	<ul style="list-style-type: none"> <li>Bachelor's degree with appropriate major in conformity with the application for license</li> <li>5 years experiences in conformity with application for license</li> </ul>	<ul style="list-style-type: none"> <li>Bachelor's degree in conformity with the application for license</li> <li>3 years experiences in conformity with the application for license</li> </ul> <p>or</p> <ul style="list-style-type: none"> <li>College degree or Junior college degree in conformity with the application for license</li> <li>5 years experiences in conformity with the application for license</li> </ul>
Construction Supervision	<ul style="list-style-type: none"> <li>Experience of chief supervision or direct supervision at least 1 Class I construction work that conform to his/her license</li> </ul>	<ul style="list-style-type: none"> <li>Experience of chief supervision or direct supervision at least 1 Class II construction work that conform to his/her license</li> </ul>	<ul style="list-style-type: none"> <li>Experience of chief supervision or direct supervision at least 1 Class III construction work that conform to his/her license</li> </ul>
	<p>or</p> <ul style="list-style-type: none"> <li>Experience of chief supervision or direct supervision at least 2 Class II construction works that conform to his/her license</li> </ul>	<p>or</p> <ul style="list-style-type: none"> <li>Experience of chief supervision or direct supervision at least 2 Class III construction works that conform to his/her license</li> </ul>	<p>or</p> <ul style="list-style-type: none"> <li>Experience of chief supervision or direct supervision at least 2 Class IV construction works that conform to his/her license</li> </ul>
Construction Site Manager	<ul style="list-style-type: none"> <li>Class I license for construction supervision</li> </ul>	<ul style="list-style-type: none"> <li>Class II license for construction supervision</li> </ul>	<ul style="list-style-type: none"> <li>Class III license for construction supervision</li> </ul>
	<p>or</p> <ul style="list-style-type: none"> <li>Class II license for construction safety practice</li> </ul>	<p>or</p> <ul style="list-style-type: none"> <li>Class II license for construction safety practice</li> </ul>	<p>or</p> <ul style="list-style-type: none"> <li>Class III license for construction safety practice</li> </ul>
	<p>and</p> <ul style="list-style-type: none"> <li>Experience of 1 Class I construction work that conform to his/her license</li> </ul>	<p>and</p> <ul style="list-style-type: none"> <li>Experience of 1 Class II construction work that conform to his/her license</li> </ul>	<p>and</p> <ul style="list-style-type: none"> <li>Experience of 1 Class III construction work that conform to his/her license</li> </ul>

Qualification	Class I	Class II	Class III
	or	or	or
	<ul style="list-style-type: none"> <li>• Experience of 2 Class II construction works that conform to his/her license</li> </ul>	<ul style="list-style-type: none"> <li>• Experience of 2 Class III construction works that conform to his/her license</li> </ul>	<ul style="list-style-type: none"> <li>• Experience of 2 Class IV construction works that conform to his/her license</li> </ul>
Project Management	<ul style="list-style-type: none"> <li>• Experience of project manager of 1 group-A project that conform to his/her license</li> </ul>	<ul style="list-style-type: none"> <li>• Experience of project manager of 1 group-B project that conform to his/her license</li> </ul>	<ul style="list-style-type: none"> <li>• Experience of project manager of 1 group-C project that conform to his/her license</li> </ul>
	or	or	
	<ul style="list-style-type: none"> <li>• Experience of project manager of 2 group-B project that conform to his/her license</li> </ul>	<ul style="list-style-type: none"> <li>• Experience of project manager of 2 group-C project that conform to his/her license</li> </ul>	

Source: Decree No.59/2015/ND-CP, Decree No.42/2017/ND-CP

Procedure for acquisition of qualifications is shown in Figure 9-6. Applicants submit application documents, and then take examination which is held by council of examination. If applicants pass the examination which includes professional and legal knowledge, they acquire the qualification. Class I qualification is issued by MOC and Class II and III qualifications are issued by DOC.



Source: Project team

**Figure 9-6 Flow of Acquisition of Engineers Qualification**

Details and operational matter about examination are described in Circular No.17/2016/TT-BXD. The following contents are main changes to be applied in this circular.

- ♦ Question database is completed.
- ♦ Each applicant has ID, which will be used to recognize each qualification folder, belonged organization and assigned construction package timely. This is expected to prevent duplicated registration.
- ♦ Examination is multiple choices and contents are published in MOC's website. Difficulty of examination content differs according to the grade.

## 2) Comparison of Current and Previous System Regarding Engineer Qualification

Table 9-16 shows comparison of engineer qualification between previous system and current

system. Main improvement is the following.

- ♦ 3-class system for each qualification is applied, while 1 or 2 class was used in previous system.
- ♦ In order to obtain qualification, examination is introduced in current system, while application and/or training course was required in previous system.
- ♦ Each qualification and job title is completely linked to the current registration and grading system.

**Table 9-16 Comparison of Engineers Qualification**

	Previous System	Current System
Regulation	Construction law (No.16/2003QH11), Decree No.12/2009/ND-CP, Decree No.15 /2013/ND-CP	Construction Law (No.50/2014/QH13), Decree No.59/2015/ND-CP, Circular No. 22/2009/TT-BXD, Circular 05/2010/TT-BXD
Responsible Organization	<ul style="list-style-type: none"> <li>◆ <u>Organization (1)</u></li> <li>• DOC</li> </ul>	<ul style="list-style-type: none"> <li>◆ <u>Organizations (2)</u></li> <li>• MOC: Class 1</li> <li>• DOC: Class 2 and Class 3</li> </ul>
Classification of Qualifications	<ul style="list-style-type: none"> <li>◆ <u>Grade</u></li> <li><u>Architect, Civil, Cost Estimator</u></li> <li>• No grading</li> <li><u>Construction Supervisor</u></li> <li>• CS 1 (all project)</li> <li>• CS 2 (class IV project)</li> <li><u>Job Titles</u></li> <li>• Level 1 (all class of project)</li> <li>• Level 2 (only class II, III and IV project)</li> <li>◆ <u>Type of Scope (4 qualifications and 6 job titles)</u></li> <li><u>Qualification (4)</u></li> <li>• Architect (A)</li> <li>• Engineer (E)</li> <li>• Cost estimator</li> <li>• Construction supervisor</li> <li><u>Job Title (6)</u></li> <li>• FS preparation leader (for E, A)</li> <li>• Project management leader</li> <li>• Chief surveyor (for E)</li> <li>• Chief designer (for E, A)</li> <li>• Design manager (for E, A)</li> <li>• Site manager</li> <li>◆ <u>Type of Field (5)</u></li> <li>• Civil construction work</li> <li>• Industrial construction work</li> <li>• Technical infrastructure construction work</li> <li>• Transport construction work</li> <li>• Agriculture and rural development construction work</li> </ul>	<ul style="list-style-type: none"> <li>◆ <u>Class (3)</u></li> <li>• Class 1 (all class of project)</li> <li>• Class 2 (class II, III and IV project)</li> <li>• Class 3 (class III and IV project)</li> <li>◆ <u>Type of Scope (7 qualifications and 2 job titles)</u></li> <li><u>Qualification (7)</u></li> <li>• Construction survey practice</li> <li>• Construction planning practice (this scope does not have classification of field)</li> <li>• Construction design practice</li> <li>• Construction supervision practice</li> <li>• Construction inspection practice</li> <li>• Construction valuation practice</li> <li>• Project management practice</li> <li><u>Job Title (1)</u></li> <li>• Construction site manager</li> <li>◆ <u>Type of Field (6)</u></li> <li>• Civil construction work</li> <li>• Industrial construction work</li> <li>• Technical infrastructure construction work</li> <li>• Transport construction work</li> <li>• Agriculture and rural development construction work</li> <li>• Security and Defense</li> </ul>
Procedure	<ul style="list-style-type: none"> <li>◆ <u>Outline</u></li> <li>• To get license for Cost Estimator and Construction Supervisor, taking a training and submission of application are required.</li> <li>• To get license for Architect and Engineer, submission of application is required. Taking a training is not required.</li> <li>• Project Manager is not qualification, but taking a training is required to get certificate.</li> <li>◆ <u>Training: (for Cost Estimator and Construction Supervision and Project Management leader only)</u></li> <li>• Professional knowledge</li> </ul>	<ul style="list-style-type: none"> <li>◆ <u>Outline</u></li> <li>• All type of qualification apply same process, such as submission of application, taking an examination and issuance of license.</li> <li>◆ <u>Examination</u></li> <li>• Professional knowledge</li> <li>• Legal knowledge</li> </ul>

	Previous System	Current System
	<ul style="list-style-type: none"> <li>• Legal knowledge</li> </ul> <p>◆ <u>Submission of application: (for 4 qualifications)</u></p> <ul style="list-style-type: none"> <li>• Application form</li> <li>• Copies Certificate of completion of training</li> <li>• Declaration of professional experience</li> </ul> <p>◆ <u>Issuance</u></p> <ul style="list-style-type: none"> <li>• DOC (for qualifications)</li> <li>• PO (judge by documents in bidding proposals, project by project)</li> </ul>	<p>◆ <u>Submission of application</u></p> <ul style="list-style-type: none"> <li>• Application form</li> <li>• Copies of degrees or certificates</li> <li>• Declaration of professional experience</li> </ul> <p>◆ <u>Issuance of License</u></p> <ul style="list-style-type: none"> <li>• MOC (Class 1)</li> <li>• DOC (Class 2 and 3)</li> </ul>
General Requirement	<p><u>For Construction Supervisor</u></p> <ul style="list-style-type: none"> <li>• CS 1 Bachelor's degree, 3 years or 5 projects experiences</li> <li>• CS 2 Junior college degree, 3 years experiences</li> </ul> <p><u>For job titles</u></p> <ul style="list-style-type: none"> <li>• Level 1 Bachelor's degree with appropriate major and 7 year experience in conformity with application license</li> <li>• Level 2 Bachelor's degree with appropriate major and 5 year experience in conformity with application license</li> </ul>	<ul style="list-style-type: none"> <li>• Class 1 Bachelor's degree with appropriate major and 7 year experience in conformity with application license</li> <li>• Class 2 Bachelor's degree with appropriate major and 5 year experience in conformity with application license</li> <li>• Class 3 Bachelor's degree with appropriate major and 3 year experience in conformity with application license or College degree or junior college degree and 5 year experience in conformity with application license</li> </ul>
Examination	NA (Short test was conducted in training)	<p>◆ <u>Contents</u> Professional and Legal knowledge by multiple choice</p> <p>◆ <u>Frequency</u> Depending on number of applicants in each region and province</p> <p>◆ <u>Location</u> In each region and province</p>
Training (for Cost Estimator and Construction Supervision and Project Management leader only)	<p>◆ <u>Period</u> 2 ~ 3 weeks (136 hours)</p> <p>◆ <u>Location</u> Training centers authorizes by MOC</p> <p>◆ <u>Contents</u></p> <ul style="list-style-type: none"> <li>• Legal and troubles</li> <li>• Construction supervision for social industrial sector</li> <li>• Construction supervision of transportation infrastructure</li> <li>• Construction supervision of irrigation and hydroelectric power generation</li> <li>• Short test (after the training)</li> </ul>	NA
Renewal	◆ <u>Term of validity: 5 years</u>	◆ <u>Term of validity: 5 years</u>

Source: Project team

### 3) Issues and Problems

Outline of qualification system is prescribed in Decree No.59/2015/ND-CP, and detail of the qualification system such as council of the examination, question of the examination, and place of examination are determined in Circular No.17/2016/TT-BXD.

DOC is in charge of issuance of the qualifications, but DOCs did not update the information timely. CAMA has developed software system (in line with e-Government program) to operate engineer qualification system, and it is expected to solve this operation problem.

The current changes in engineer's qualification system match along with recommendation in the



quality TCP and is expected to be a big improvement in Viet Nam construction industry. 3-rank system is expected to encourage each individual to study continuously and exam database will be helpful to provide equal level of examination contents all over Viet Nam.

Engineer qualification system is an important component in evaluation of engineering capacity of construction contractors because it is to judge the human resource in construction contractors. For this purpose, detailed content such as test method, difficulty, and pass rate is also important as well as overall system.

In addition, Viet Nam Engineering Construction Association (VECAS) replied to the interviews of the Project team regarding current qualification system as follows.

- ♦ Examination should be divided into two sessions which are interview and writing test
- ♦ Knowledge both on management (regulations, standards, codes, etc.) and expertise (case study, etc.) should be considered
- ♦ It's necessary to have strict regulations on the completion of annual continuous training, and registered engineers must yearly report their professional activities to state authorities.

These points are implemented in developed countries and recommended to incorporate in the engineer qualification system in Viet Nam in future. To adopt these further improvements, bigger or different organization in charge of this operation will be necessary.

Since current construction law and decree are issued, it is important that CAMA commences new engineering system smoothly and these individual qualifications should be applied in the evaluation of contractors even though some detailed issues are observed or some improvement can be considerable in comparing with oversea practice.

**Table 9-17 Issues/Problems on Qualification System**

Issues/Problems
- Further revision such as test method, difficulty and pass rate are requested and necessary

Source: Project team

### (3) Construction Contractor Work Performance Evaluation System

#### 1) Current Situation of Construction Contractor Work Performance Evaluation System

Contractor work performance evaluation system is to evaluate contractor's work performance at each package with appropriate indexes prepared for the system. Evaluation results can be used in the contractor selection for the purpose of preventing incompetent contractors from participating in the state-budget projects. It is also very much beneficial to raise contractor's awareness towards construction project management, quality management and safety management by giving the sense of being evaluated, and also to raise project owner's awareness towards construction work supervision, directing their eyes to the construction projects.

Construction contractor work performance evaluation had not been conducted, and work performance system was proposed in the Quality TCP. The construction contractor work performance evaluation proposed in the Quality TCP was established based on numerous discussions with C/Ps at that time by comparing practice in other countries, and seems well adjusted in Viet Nam construction practice.

CAMA understood the necessity and importance of construction contractor work performance evaluation, however, CAMA does not commence this system.

In regards of implementation system, a registration system, which is under development by CAMA was revised to be applicable for the commencement of work performance evaluation although minor change needs to be required. One of the registration items is allotted as 'Work performance evaluation if any'.

2) Issues and Problems

CAMA understood necessity of construction contractor work performance evaluation system, however, CAMA pointed out that project owners did not find the system really useful for themselves. Its implementation method as well as benefits of the system needs to be explained carefully since work performance evaluation is a new system to be installed in Viet Nam construction industries.

Further study was required to identify what point project owners do not find this system useful in and also to check if there is any other concern or problems to commence this evaluation system.

In order to commence construction contractor work performance evaluation system, CAMA needs to explain contents and benefits of the system to project owners. Some related regulations have to be established to commence this system in Viet Nam.

**Table 9-18 Issues/Problems on Work Performance Evaluation System**

Issues/Problems
- Project owners do not understand the benefit of the system for them.
- Regulation on this system is not promulgated.

Source: Project team

**9.2.2 Construction Contractor Work Performance Evaluation System**

(1) Required Activities to Commence Work Performance Evaluation

Based on the problem identified in 9.2.1 (3), required activities for implementation were discussed with CAMA for the commencement of Work Performance Evaluation.

1) Comments from Industries and Project Owners

It is important to obtain opinions from construction industries and PMU regarding work performance evaluation so that required activities to commence work performance evaluation are able to be identified. For this purpose, the Project team dispatched short questions to construction industries such as Viet Nam Association of Construction Contractors (VACC), Viet Nam Engineering Construction Association (VECAS), and Overseas Construction Association of Japan Incorporation (OCAJI) and collected their answer and also had discussion with 3 PMUs. The obtained comments are shown below.

Most organizations understood the benefits of the evaluation system and agreed with its commencement on condition that fair and objective evaluation is secured. At the same time, concerns whether transparency and fairness is secured at evaluation was observed in some organizations.

<b>Comments on Work Performance Evaluation System from Construction Industries and PMUs</b>
<p>&lt; Overall &gt;</p> <ul style="list-style-type: none"> <li>- New and interesting system which is different from the current regulations stipulated by Tendering Law of Viet Nam and could be referred to for application in Viet Nam. (VACC)</li> <li>- This system will help to enhance the role and position of the contractors who are qualified and do the business with good reputation ensuring quality and schedule of the works and to reduce the cases of bid rigging. (VACC)</li> <li>- We should apply the score accumulation for contractors after completing construction packages/projects. (VECAS)</li> <li>- It will better be installed if fairness is guaranteed by completely objective evaluation criteria. (OCAJI)</li> <li>- A system to assess results of each performed construction contracts in Viet Nam is needed setting up. (OCAJI)</li> <li>- For POs, the final as well as the most important goal is to find out good and capable contractors for their projects. Therefore, this system is quite interesting and will be quite useful if we can work out suitable criteria to select the best contractors. (PMU)</li> <li>- In case we have clear evaluation criteria, there's no problem to introduce the system. (PMU)</li> </ul>

<b>Comments on Work Performance Evaluation System from Construction Industries and PMUs</b>
<p>&lt; Evaluation Method &gt;</p> <ul style="list-style-type: none"><li>- The main issue to consider is the transparency in evaluation. (VACC)</li><li>- Score accumulation for contractors for their project implementation and management capacity. (VECAS)</li><li>- Score accumulation for professionally practicing individuals who directly participate in the project. (VECAS)</li><li>- Fairness of evaluation is most critical in evaluation system. (OCAJI)</li><li>- Assurance of transparency of evaluation document under strict supervision of the 3<sup>rd</sup> party. (OCAJI)</li><li>- Evaluation for quality and safety better be included. (OCAJI)</li><li>- We need clear evaluation criteria and scores. (PMU)</li><li>- It's necessary to ensure the transparency during the evaluation. (PMU)</li><li>- It's necessary to carefully divide the ratio of criteria in order to ensure the effectiveness. It's also needed to ensure the transparency as well as the objectiveness in the evaluation process for the benefit of the PMU in particular and the society in general. Therefore, it's essential to improve the awareness and ethics of evaluators. (PMU)</li></ul> <p>&lt; Concern &gt;</p> <ul style="list-style-type: none"><li>- We are aware of the system, further studies regarding the method of implementation and proposed use in Viet Nam should be considered first. (OCAJI)</li><li>- There is a risk that the system may be adversely implemented, should valid contractual disputes arise during the later stages of the project and a greater emphasis is placed on the dispute when evaluation is carried out. (OCAJI)</li><li>- I don't think this system needs to be introduced in Viet Nam because in Viet Nam the work performance evaluation is not objective or carried out in not correct manner. (OCAJI)</li></ul>

Source: Project team

## 2) Required Activity to Commence Work Performance Evaluation

Required activities to commence work performance evaluation were discussed and concluded in CPMUs as shown below.

### i) Implementation Manual (enclosed in Annex 9-1)

Since work performance evaluation is a new system to be installed in Viet Nam construction industries, its implementation method as well as benefits of the system need to be explained carefully. Draft implementation manual for work performance evaluation need to be established in CPMU and supposed to be used in trials on sample projects.

### ii) Dialogue with Construction Sector

CAMA had a dissemination plan regarding current circular to relevant authorities and was recommended to introduce work performance evaluation in this opportunity. Workshop/seminar and dialogue of CCQS Project are used for dissemination of the system.

### iii) Trials on Sample Projects

Even though trials of work performance evaluation were conducted in the Quality TCP to develop the evaluation mechanism, the system was not well known even in MOC. Further practicing trial evaluation in pilot projects was preferable not only for MOC but also for construction sectors to understand the benefit and mechanism of the evaluation.

### iv) Revision of Regulations

Before commencement of the work performance evaluation, it is necessary to enforce project owner and entities by regulation. There is not any obstacle for CAMA to draft a regulation for work performance evaluation.

### v) Phased Introduction

There observed a concern about fairness and objectiveness in the questionnaire. In addition, it is considered to be a too drastic change if work performance evaluation is applied in every construction package no matter if it is public or private sector at only one-time regulation change, because it requires more efforts not only by POs but contractors and supervising

authorities as well comparing to existing construction practice.

Thus, phased introduction plan was established under discussion in CPMU. For the first implementation, it is recommended that the evaluation of class I State budget projects commence first and resulting scores should not be related to tender process. Full introduction in all state budget projects is recommended to commence after confirmation of objectiveness and fairness and resulting score will be able to be used at tender process at this stage.

(2) Trials on Sample Projects

The plan for commencement of Work Performance Evaluation (WPE) in CCQS Project was prepared in CPMU and trials were commenced in 3 sample projects.

1) Plan for Commencement of WPE in CCQS Project

i) Policy

MOC experts shall understand the evaluation mechanism, arrange the evaluation meeting and instruct POs/PMUs and supervising consultants at the meeting.

ii) Expected Outcome

- ♦ MOC experts understand the whole system through actual implementation for future implementation
- ♦ WPE system including implementation manual and evaluation sheet are checked and modified toward objective evaluation

iii) Selection of Trial Project

- ♦ 3 different construction types (ex. Building, Plant, Road and Bridge) of projects
- ♦ Trial of WPE was conducted for 3 sample projects of the Bach Mai hospital project, the Song Hau thermal plant project and the Binh Ca bridge project.

**Table 9-19 List of Sample Project for WPE**

Project Name	New construction project of 2 <sup>nd</sup> base of Bach Mai hospital I	Song Hau Thermal Plant	Approach Road of Binh Ca Bridge
Location	Phu Ly city, Ha Nam province	Chau Thanh district, Hau Giang Province	Tyuen Quang Province
Owner	PMU of Important Projects under MOH	Petro Viet Nam (PVN)	MOT
Project Management		SHIPP (PMB)	PMU of Ho Chi Minh Road
Selection/Contract	Domestic Open Bidding	Direct appointment / EPC	Direct appointment
Total Investment	5,000 billion VND (construction cost: 2,000 billion VND)	US\$ 2,000,000,000	224 billion VND (for 3 packages)
Period	2014.12-2017.12	2011-2019	2016.10-2017.12
Construction Type	Building	Power Plant	Bridge of grade II,III
Class of Project	State budget Class 1	Special	Road of II
Contractor	JV of Corporation 36, Corporation 319, Thanh An Corporation	EPC: LILAMA (Chimney) CRI (Construction items) PVC (Foundation) PVC-GEO (Port) PTSC Etc.	- JV of Quyet tien construction investment corporation, Construction and investment company no.575 and Transport infrastructure management and construction no.487 - Ha An construction and consultant - Bac Ai construction consultant company

Project Name	New construction project of 2 <sup>nd</sup> base of Bach Mai hospital 1	Song Hau Thermal Plant	Approach Road of Binh Ca Bridge
Consultants	Design: VK Studio Architects, Planners and Designers. (Surveyor) Hanoi Survey-Design company (Structure): VNCC (M&E): VNCC SV: CONINCO	PMC: Fichtner General: TEPCO Others: PVE, VNCC, LHT etc.	Dinvai construcciones S.A.Cuba

Source: Project team

## 2) Feedback of Trial of WPE

Prepared questions and obtained answers/opinions are shown in Table 9-20. All participants agreed with the commencement of work performance evaluation after experiencing trial. As a whole, positive opinions were obtained for basic scheme, and objectiveness and transparency.

**Table 9-20 Feedback of WPE Trials**

Questions	Yes/Good	Opinions
Q1 WPE should be introduced?	Yes:16	
(Bach Mai hospital)	(Yes:6)	
(Song Hau thermal Plant)	(Yes:4)	
(Binh Ca bridge)	(Yes:6)	
Q2 Basic Scheme		
Timing (at acceptance) (Bach Mai hospital) (Song Hau thermal Plant) (Binh Ca bridge)	Good:14 (Good:5) (Good:3) (Good:6)	2 other - phase acceptance - Better to specify (phase acceptance or component acceptance)
Length of Time (Half day for document & Half day for site) (Bach Mai hospital) (Song Hau thermal Plant) (Binh Ca bridge)	Good:12 (Good:4) (Good:2) (Good:6)	3 others, 1 no-answer - Depending on project size - Depending on project size - 1 Day is not enough (depending on actual condition)
- Evaluation Items and Questions (Bach Mai hospital) (Song Hau thermal Plant) (Binh Ca bridge)	Good:12 (Good:4) (Good:2) (Good:6)	3 others, 1 no-answer - Need more items: Finance - Need more items - Should be specified at each project
Q3 Objectiveness and Transparency	Yes:14	2 others
(Bach Mai hospital)	(Yes:6)	
(Song Hau thermal Plant)	(Yes:2)	- Need third party
(Binh Ca bridge)	(Yes:6)	- Depends on perceptibility of evaluator

Source: Project team

## (3) Roadmap

On the basis of the discussion above, a draft version of roadmap for work performance Evaluation was prepared in CPMU.

After trials on sample project in CCQS Project and revision of regulation, WPE of class I State budget projects will commence first without linkage of resulting scores to tender process. Full introduction in all state budget projects is recommended to commence after confirmation of objectiveness and fairness and resulting score will be able to be used at tender process at this stage.

**Table 9-21 Roadmap of Work Performance Evaluation**

Plans	Road Map (Fiscal Year)											
	~2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
<b>Quality TCP</b>												
Evaluation Mechanism developed	●											
Trial (4Projects)	△											
<b>CCQSP</b>												
1. Identify Problems / Hearing		●	●	●								
2. Implementation Manual			●	●	●							
3. Dialog with Construction Sector/Training&Seminar			●	●	●							
4. Trial on sample projects				●	●	●						
<b>Initial Introduction (State funded Class I Projects, Score used as reference )</b>												
1. Revise regulations(Dessemination/Public Hearing)					●	●						
2.Implementation in State funded Class I Projects						●	●	●	●			
3.Public hearing(Check if transparency and operation )							●	●	●			
4.Modifications to Evaluation Mechanism								●	●			
<b>Full Introduction (State funded All Project, Score integrated into Contractor's Grading)</b>												
1.Revision of regulation									●	●		
2.Implementation in all State funded Projects										●	●	●

Source: Project team

### 9.2.3 Formulation of Evaluation Method on Engineering Capacity of Construction Contractors

Evaluation method on Engineering Capacity of Construction Contractors consists of components such as engineer's qualification system, registration system, work performance evaluation, grading system. Result of evaluation on contractor engineering capacity can be utilized for selection of construction contractor.

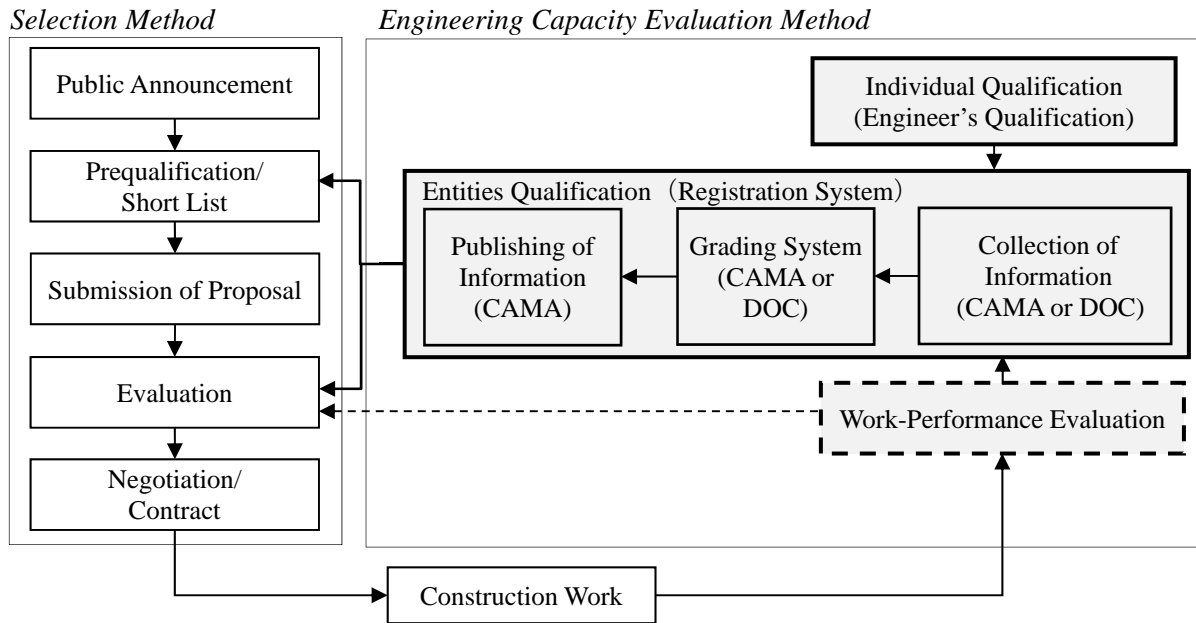
#### (1) Procedure of Formulation of Evaluation Method on Engineering Capacity of Construction Contractors

Procedure to formulate evaluation method on Engineering Capacity of Construction Contractors is discussed in CPMU as follows. Details of each items are described in the Guideline for Construction Contractor Evaluation Method.

- i) Development of outline structure of Evaluation Mechanism
- ii) Study and comparing oversea practices
- iii) Development of draft version of Evaluation Mechanism
- iv) Dialogue with Viet Nam Construction Industry
- v) Preparation of Roadmap

#### (2) Outline Structure of Evaluation Mechanism

To develop evaluation mechanism, outline structure to show basic mechanism is essential to have a common view and to lead prosperous discussions. One more important thing is that outline structure should reflect current Viet Nam practice so that improvements are easy to be understood and incorporated. Outline structure of evaluation mechanism was developed through discussion with CAMA as shown Figure 9-7. Grading system is described in this chapter, since grading system is one of item of evaluation mechanism. So, grading system is stated in this Section instead of Section 9.2.6.



Source: Project team

**Figure 9-7 Outline Structure of Evaluation Mechanism**

(3) Contents of the Guideline for Construction Contractor Evaluation Method

Following the review of current situation of engineering capacity evaluation method in Viet Nam, introduction of oversea practice and comparison of evaluation method of Construction Contractor in 3 Countries, the Project team formulates the evaluation method on engineering capacity of construction contractors (herein after referred to as “GLEM”) and alternation with the basic objective below.

- ♦ To help MOC experts to check the necessary items and contents when designing evaluation method of engineering capability of construction contractors in future.
- ♦ To explain to the related sectors (PO, PMU, and contractors) about the future vector of evaluation method of contractors engineering capacity and to obtain opinions and comments from related sectors to improve GLEM.
- ♦ To induce construction contractor’s effort toward improvement of their engineering capacity by means of showing future evaluation visions.

Contents of GLEM are show in Table 9-22.

**Table 9-22 Contents of Evaluation Method on Engineering Capacity of Construction Contractors**

Chapter	Title & Contents
	Preface
Chapter 1	Introduction 1.1 Objective of Evaluation Method of Engineering Capacity of Contractor 1.2 Definition of term for each components
Chapter 2	Current situation 2.1 Engineer Qualification System 2.2 Collection Information 2.3 Grading System 2.4 Publishing of Information 2.5 Chronological Improvement in Registration System
Chapter 3	Introduction of Oversea Practice 3.1 Practice in Japan 3.2 Practice in Singapore

Chapter	Title & Contents
Chapter 4	Establishment of Improvement Plan 4.1 Policy for Establishment of Improvement Plan of Evaluation Method 4.2 Comparison of Evaluation Method of Const.-Contractor in 3 Countries 4.3 Improvement of Evaluation Method of Engineering Capacity of Contractors 4.4 Future Plan

Source: Project team

Chapter 1 defines terms for each component of engineer qualification system, registration system, grading system and work performance evaluation system. And proposed outline structure of evaluation method is shown in this chapter.

Chapter 2 explains current evaluation method which is composed with engineering qualification system, registration system (collection and publishing of information), grading system. Difference of evaluation method between previous regulation and current regulation is also explained.

Chapter 3 explains evaluation method in Japan and Singapore which is composed with outline structure, business license for construction contractors, registration system, grading system and evaluation method.

Chapter 4 explains proposed evaluation method followed comparison of evaluation method of construction contractor in 3 countries. Main proposed items to improve current evaluation method are shown below. Future plan and roadmap to implement the proposed evaluation method is also explained.

- ♦ Qualification System: Introduction of advanced examination method, continuous professional development system, private qualification and mutual recognition between international standard are proposed.
- ♦ Registration System: Introduction of classification of main-contractor and sub-contractor is proposed.
- ♦ Grading System: Introduction of classification of general contractor and special contractor, setting of tender limit by each grade are proposed.
- ♦ Evaluation Method: Enhancement of application of comprehensive evaluation means, and introduction of additional evaluation items such as financial condition of contractors, past record (work performance evaluation) are proposed.

The GLEM was compiled and agreed in CPMU meeting, and presented in the meeting between MOC Project Preparation Members (at the time Project Coordination Unit: PCU was not organized yet) and JICA team in September 2016. Then the Project team presented the GLEM (including the Grading System) in the Third Joint Steering Committee (JSC) meeting and submitted it to MOC in October 2016 with the covering letter.

#### (4) Dialogue with Construction Industry

A dialogue with construction industries was held to collect comment on the evaluation method on March 10<sup>th</sup>, 2017. All of persons who commented in the dialogue totally agreed with the recommendations. Summary of discussion in the dialogue is shown in Table 9-23.

**Table 9-23 Summary of Discussion in Dialogue with Construction Industries**

Category	Discussion
WPE	Q1: Currently in Viet Nam, there is only minutes of acceptance or even contract liquidation in which simple assessment on contractors is included in the end of construction completion. If WPE is implemented, the evaluation sheet should be very detailed and incorporated into circulars, decrees that POs/contractors should follow.  A1: The current final acceptance is simple and not enough to raise awareness for better quality, therefore we propose work performance evaluation. If the evaluation sheet is very detailed, it will be difficult to commence. Therefore, we prepare the evaluation sheet with about 100 questions. We should start from simple system and improve gradually.



Category	Discussion
	<p>Q2: If the evaluation is applied, there will be a difficulty for POs/contractors. If during WPE, there are many mistakes by the contractor, the project owner will face difficulty to conduct acceptance since Audit Company will raise questions about those mistakes.</p> <p>A2: If many mistakes are conducted in actual implementation, such records should be stored and utilized for future assessment of contractors. The evaluation for quality assessment of construction work is only 50 points. Other 50 points are for assessment of organization work i.e. safety, testing, qualification of site manager etc.</p>
	<p>Q3: In evaluation sheet, safety management only accounts for 10%. Labor safety is an important issue. I hope that your study can increase grade for safety, which will be comply with international practice and pay more attention to labor.</p> <p>A3: Percentages for items in the evaluation sheet can be changed anytime. In Japan, we consider percentage of each item every year and make a suitable change. I think Viet Nam can apply the same way. We will have further discussion on this issue.</p>
Evaluation Method/ Selection Mechanism	<p>Q4: Who will evaluate such kind of proposal because if we propose something new and advanced there should be experts to evaluate it. I would recommend that we should raise the role of State Acceptance Council.</p> <p>A4: One of the most important points of this kind of evaluation is capacity of project owner. For normal package, professional PMU may be able to evaluate itself. In the case of one-time PMU or small PMU, consultants should be hired for evaluation. For high technical projects or advanced projects, I think outside experts should be hired as your suggestion. We will have further discussion with counterparts of MOC.</p>
	<p>Q5 (Comment): I totally agree with proposal regarding general evaluation. There are incapable contractors which would cause many accidents or poor quality control, however POs must select contractors basing on price and there are no reason to reject such kind of contractor. If the evaluation is applied, we may be able to eliminate bad contractors and select good contractors despite of the fact that the price may be a little bit higher.</p>
	<p>Q6 (Comment): I totally agree with you on the improvement of grade in regard of technical aspect for contractor or tender selection. Recently in Viet Nam we focus much on the price that mostly bidder of the lowest price is selected. This may lead to the unsecured quality and unsafety of the construction works.</p>
	<p>Q7 (Comment): I used to submit tender document in Japan and I know that it is very complicated so I would suggest that for final proposal you should give one or two examples about bridge project or tunnel project for easier understanding.</p>

Source: Project team

#### (5) Notes regarding Current Viet Nam Construction Regulations

During CCQS Project, a question was raised if stronger requirements in individual and entity qualification could be an obstacle to infrastructure development. The Project team drafted the ‘Note regarding current Viet Nam Construction Regulation’ to explain the necessity of qualification and propose improvements, which is summarized in Table 9-24.

**Table 9-24 Summary of Notes Regarding Current Viet Nam Construction Regulations**

<p>1. Current changes/improvements in Viet Nam is in the right direction for the securing construction quality and preferably to be kept.</p> <ul style="list-style-type: none"> <li>♦ Professional (=Permanent) PMU instead of one time (=temporary) PMU are encouraged to take part in construction management. Bigger and more comprehensive organization should be recommended to enhance staff capacity continuously.</li> <li>♦ 3 class system is beneficial to encourage further capacities.</li> <li>♦ It is not recommended to loosen the each requirement according to public opinion. <ul style="list-style-type: none"> <li>- Developed countries face huge maintenance demands some decades after economic boom, which is the current social problem for many countries.</li> <li>- Poor construction quality leads to increase future maintenance budget.</li> </ul> </li> </ul> <p>2. Future Recommendations</p> <ul style="list-style-type: none"> <li>♦ Modification regarding entities qualification <ul style="list-style-type: none"> <li>- Requirements of contractors and consultants should be separately considered.</li> <li>- Number of fields and classifications on consultant firms seems too many and can be simplified.</li> </ul> </li> </ul>
---

- To the contrary, requirements of construction contractor are important because construction contractors are the entities in charge of actual implementation of construction works.
- Some higher evaluation items in future are suggested in the GLEM in CCQS Project.
- Also, demarcation between 'Main contractor / Sub contractor' and 'General contractor and Specialty contractor' should be applied in future.
- ♦ Modification regarding individual qualification
  - For 3 classes for individual classification  
Advanced qualification (Professional Engineer/Architect in Japan) should be established as the 1<sup>st</sup> class classification in future.
  - 2<sup>nd</sup> and 3<sup>rd</sup> class: Current 3 grade exam system can be simplified to 2 grades because requirements are only passing alternative questions and experience. This exam method and requirements cannot identify the skill required for the 1<sup>st</sup> class/advanced engineers.
  - Individual qualifications are finely divided according to scopes and the details make it difficult for one engineer to have a series of qualifications for intended field. Basically engineers are required to implement their job with consideration from planning stage to construction stage. 7 scope can be simplified to 3(such as survey, consultant, and construction) or required experience may be loosened.
- ♦ Accountability
  - To judge/explain the necessity of regulations and securing a good balance between regulations and demand of construction workers.
  - Statistics regarding number of construction problem, construction accidents should be timely collected to judge if the current regulation is strict more than enough or not.

Source: Project team

For the supplement of this notes, the Project team prepared Table 9-25, Table 9-26, and Table 9-27. Main purpose of these tables is to explain as follows.

- ♦ In Viet Nam, entities qualification is developed systematically, however, there are too many classifications for each field because of classifying at each phase / scope.
- ♦ Requirements for construction contractor are still not strict if comparing international practice
- ♦ Advanced qualifications such as Professional Engineer/Architect, which allow engineers to conduct plural scopes, would be beneficial.

**Table 9-25 Comparison of Entity Qualification**

Country	Viet Nam	Japan
Outline	<p><u>Entity's Qualification (111 categories)</u></p> <ul style="list-style-type: none"> <li>♦ Type of Scope 9 scopes (5 Survey (no classification of field), FS, Planning (no classification of field), Design &amp; design review, FS preparation and assessment, Project management, Construction, Construction supervision, Inspection, and Cost management (no classification of field))</li> <li>♦ Type of Field 6 fields (Civil, Industrial, Technical infrastructure, Transport, Agriculture and Security)</li> <li>♦ Grade 3 grades (Class 1, 2 and 3)</li> </ul> <p><u>Requirements</u></p> <ul style="list-style-type: none"> <li>- Number of staffs</li> <li>- Work procedure and quality management system</li> <li>- Number of completed projects</li> <li>- Financial capability (Ability of mobilization of machineries,</li> </ul>	<p><u>Consultant</u></p> <ul style="list-style-type: none"> <li>♦ Field: 21 field, no class</li> <li>♦ Requirements                             <ul style="list-style-type: none"> <li>- Capital 5 million yen</li> <li>- Net worth 10 million yen</li> <li>- (Fulltime) Professional Engineer for each field</li> </ul> </li> </ul> <p><u>Construction Contractor</u></p> <ol style="list-style-type: none"> <li>1. Construction Business License (for all contractor)                             <ul style="list-style-type: none"> <li>♦ 28 field (= 28 permits)</li> <li>♦ 2 Classification of Permit                                     <ul style="list-style-type: none"> <li>- Ordinary Construction Permit</li> <li>- Specialty Construction Permit (allow subcontracting of more than 30 M JPY)</li> </ul> </li> <li>♦ Validity of Permit: 5 years</li> <li>♦ Requirements:                                     <ul style="list-style-type: none"> <li>- Management Representative (experience)</li> <li>- Full time Engineer at each office</li> <li>- Financial Resource For ordinary permit: 5M JPY For Special permit: 40M JPY</li> </ul> </li> </ul> </li> <li>2. Bid Participation Qualification (if involving public works as main contractor)                             <ul style="list-style-type: none"> <li>♦ 27 field, 1-4 grade (ex. of MLIT*)</li> </ul> </li> </ol>

Country	Viet Nam	Japan
	only for const.-contractor)	<ul style="list-style-type: none"> <li>♦ Evaluation criteria (by each POs)                             <ul style="list-style-type: none"> <li>- Score of business evaluation</li> <li>- Score of Work performance evaluation</li> </ul> </li> <li>♦ Every year</li> </ul>
Features	<ul style="list-style-type: none"> <li>- 9 types of scope with 6 types of field</li> <li>- 3 class for phased classification</li> </ul>	<ul style="list-style-type: none"> <li>- Consultant vs Contractor</li> <li>- No class for consultants</li> <li>- 1-4 class for Const. Contractor</li> </ul>

Source: Project team

\*MLIT: Ministry of Land, Infrastructure, Transport and Tourism (Japan)

**Table 9-26 Comparison of Entity Qualification in Japan**

	Planning/Design	Construction	Others related
Architect -Building	<u>Architect qualification</u> allows Design & Supervise at owner side <ul style="list-style-type: none"> <li>- 1<sup>st</sup> Class Architecture (1<sup>st</sup> class structure design architecture or 1<sup>st</sup> class facility design architecture for design of huge building)</li> <li>- 2<sup>nd</sup> Class Architecture</li> <li>- Wooden Architecture</li> <li>- Building work Facility Engineer</li> </ul>	<u>1<sup>st</sup>/2<sup>nd</sup> Class Registered Electrician</u>  <u>1<sup>st</sup>/2<sup>nd</sup> Class Construction Supervisor</u> <ul style="list-style-type: none"> <li>- Architect</li> </ul>	<u>Building Environment and Sanitation Management Technician</u>  <u>Fire Defense Equipment Officer</u>  <u>Registered Surveyor</u>
CIVIL - Road - Bridge - Tunnel - Power Plant - River - Sewage - Irrigation - Water supply facilities	Requirement from each Project Owner, In most case: Category of <u>Professional Engineer</u> is employed for this item.	<ul style="list-style-type: none"> <li>- Civil</li> <li>- Equipment</li> <li>- Electric</li> <li>- Piping</li> <li>- Landscaping (for full time engineer at contractor side)</li> </ul> <u>Water Supply Facilities Construction Chief Engineer</u>	<u>Safety Manager</u> <u>Safety and Health Supervisor</u>

Source: Project team

**Table 9-27 Introduction of Advanced Qualification in Japan**

<p><b>[Professional Engineer]</b></p> <ul style="list-style-type: none"> <li>♦ Professional Engineer (PE) qualifications in U.S. Canada, Japan, and many countries are the engineer qualifications without employment restrict, but to simply certify their ability.</li> <li>♦ PE in Japan is defined in the Professional Engineers Act by Ministry of Educational Culture, Sports, Science and Technology as a leading expert on science and technology, who is publicly recognized as being able to render guidance and counsel on research, development, design and evaluation relating to technology, improving the quality and the manufacturing process of products, formulating and managing project plans, investigation the cause of accidents and assessing damages.                             <ul style="list-style-type: none"> <li>- 21 Field, each field has some sub categories</li> <li>- Exam: Alternative question for common, Writing Exam, Interview for professional field</li> <li>- Mutual recognition to APEC Engineer/ IPEA</li> <li>- Pass-rate: about 15%</li> <li>- Type of field of Professional Engineer</li> </ul> </li> </ul>		
1. Mechanical Engineering	2. Marine & Ocean	3. Aerospace
4. Electrical & Electronics Engineering	5. Chemistry	6. Fiber & Textiles
7. Metals	8. Mining	9. Civil Engineering
10. Water Supply & Sewerage	11. Environmental Engineering	11 Sub categories (1.Soil Mechanics&

12. Agriculture	13. Forest	Foundation, 2.Materials & Structures, 3. Urban & Regional Planning, 4.River, Coastal & Ocean 5.Port, Harbor & Airport 6.Electric Power Civil, 7.Road, 8.Railway, 9.Tunnel g, 10. Construction Planning, Management & Cost Estimates, 11. Environmental Assessment & Management for Construction)
14. Fisheries	15. Industrial Engineering	
16. Information Engineering	17. Information Engineering	
18. Biotechnology & Bioengineering	19. Environment	
20. Nuclear & Radiation	21. Engineering Management	

**[Architect]**

- ♦ Architects and Building Engineers Act by MLIT
- ♦ Exam: Academic subjects: Planning, Environment, Regulation, Structure, Construction  
Practical Skills Test on Design and Drawing  
Pass-rate: about 12% for 1<sup>st</sup> class
- ♦ In Japan, historically, an authorized engineer involved both design field and construction field for building works so that this qualification was designed to cover both design/plan and construction.
- ♦ 1<sup>st</sup> class structure/facility design architect and Building work Facility Engineer have been established recently to respond the current detailed engineering knowledge demand.
- ♦ For designing special sized structure, structure/facility design or design check should be by this 1<sup>st</sup> class structure/facility design engineer. 1<sup>st</sup> class structure/facility design architect can be obtained with a training course and 5 years after 1<sup>st</sup> class architect qualification.

Source: Project team

### 9.2.4 Draft Circular for the Evaluation Method on Engineering Capacity of Construction Contractors

The Project team prepared the draft circular for the evaluation method on contractor engineering capacity to establish the system. And also necessary articles to be amended on Decree 59 are mentioned to promote establishment of the circular. Contents of the draft circular are shown in Table 9-28.

**Table 9-28 Contents of Draft Circular for the Evaluation Method on Engineering Capacity of Construction Contractors**

Article	Title
Article 1	Scope and Regulated Entities
Article 2	Classification of Contractors
Article 3	Construction Category and Field
Article 4	Registration
Article 5	Grading
Article 6	Procedure in Issuance of Capability Qualification
Article 7	Evaluation Issuance of Capability Qualification
Article 8	Publicity of Capability Information
Article 9	Tendering Limit
Article 10	State Management on Contractor's Capability Information
Article 11	Effect

Source: Project team

The draft circular was prepared and agreed in CPMU meeting in October 2016. The Project team presented it in Third JSC meeting and submitted it together with GLEM in October 2016 with the covering letter.

### 9.2.5 Training Workshops

As written in Chapter 11, both of First and Second Training Workshops were conducted at the end of 2016 and in June 2017 respectively.

(1) First Training Workshops

1) Contents of the Explanation Material

From Output 4, CAMA explained Entity's Qualification and Individual Qualification of Decree 59 and Circular 17, and the Project team explained Evaluation Method of Engineering Capacity of Construction Contractor and Work Performance Evaluation.

**Table 9-29 Contents of Presentation of Output 4 in First Training Workshops**

Page	Content
P1	Surface
P2	Title of GLEM
P3	Objective of GLEM
P4	Table of Contents of GLEM
P5	Chapter 1: Introduction
P6	Chapter 2: Current Situation
P7 - 8	Chapter 3: Introduction of Oversea Practice
P9 - 10	Chapter 4: Establishment of Improvement Plan
P11	Title of Work Performance Evaluation
P12	Contents: Work Performance Evaluation
P13	Purpose of Work Performance Evaluation
P14 - 17	Framework of Work Performance Evaluation
P18 - 19	Implementation of Work Performance Evaluation
P20	Closing

Source: Project team

2) Discussion with Participants

Summary of discussion in the First Training Workshop is shown in Table 9-30.

**Table 9-30 Summary of Q&A on Output 4 in First Training Workshops**

No.	Questions from Participants	Answers of Experts and C/P
1	In Viet Nam, activity regarding tender and contract is managed by MPI or DPI. What is the situation in Japan?	In Japan, other than accounting law which defines basic principle of governmental procurement, Quality Assurance Act and other regulations are developed to improve tender system for ensuring the quality by MLIT, which is responsible for construction.
2	Improvements would be start with state budget project in the presentation, and how is the adaption to private project? If WPE is applied to private project, who is the evaluator?	If it is successful, it will be implemented widely including private projects.  At present, we have been developing regional, sectorial PMU model and encourage project owners to use this kinds of PMUs. As you may know, capacity of the one-time PMU is limited because they may be formed and dismissed after only one project.
3	Today's content is how to evaluate contractor. How about evaluation for POs because some delay is due to PO?	Output 4 is also working for qualification of PMU other than contents explained this workshop.
4	Regarding WPE, 3 index: construction resource, management are different from the current inspection due to Circular 46.	Currently we do not have regulation basis for WPE, therefore, regulation change is necessary for the commencement of WPE.
5	Contents of Evaluation Method and Work Performance Evaluation are good and may be effective in future, so one recommendation is to introduce to MPI.	Especially regarding on the Evaluation Method, most recommendations are within revise of decree 59 or other circulars and not necessary to revise tender regulations. We are on the way to prepare 'selection mechanism', and we will find some matters to discuss with MPI.

Source: Project team

(2) Second Training Workshops

1) Contents of the Explanation Material

From Output 4, CAMA explained Evaluation Method of Engineering Capacity of Construction Contractor, and the Project team explained Work Performance Evaluation and Selection Mechanism.

**Table 9-31 Contents of Presentation of Output 4 in Second Training Workshops**

Page	Content
P1	Objective
P2	Title of GLEM
P3	Table of Contents of GLEM
P4	Preface
P5 - 6	Chapter 1: Introduction
P7 - 9	Chapter 2: Current Situation
P10 - 11	Chapter 3: Introduction of Oversea Practice
P12 - 17	Chapter 4: Establishment of Improvement Plan
P18	Title of Work Performance Evaluation
P19	Purpose of Work Performance Evaluation
P20 - 23	Framework of Work Performance Evaluation
P24 - 27	Implementation of Work Performance Evaluation
P28	Title of Selection Mechanism of Construction Contractor
P29	Table of Contents of the Draft of Construction Contractor Selection Mechanism
P30	Chapter 1: Current Selection Mechanism in Viet Nam
P31 - 32	Chapter 2: Oversea Practice
P33 - 36	Chapter 3: Recommendations
P37	Summary
P38	Closing

Source: Project team

2) Discussion with Participants

Summary of discussion in the Second Training Workshop is shown in Table 9-32.

**Table 9-32 Summary of Q&A on Output 4 in Second Training Workshops**

No.	Questions from Participants	Answers of Experts and C/P
1	Evaluation of engineering capacity at tender is emphasized at your presentation. How do you recommend the usage of lowest price method?	Even in Japan, we still keep lowest price method for small and easy packages and our recommendation chart is designed to utilize the lowest price method for small packages.
2	In VN, especially in my field of power plant projects, assessment price method is commonly used rather than general evaluation. How is the situation in Japan? Is there any study for method the assessment price?	Assessment price is easily applicable for equipment procurements. However, general evaluation method can deal with every construction types more comprehensively. Therefore, most construction procurements are implemented with general evaluation in Japan.
3	Some index in the work performance evaluation seems too general. Could you define more details?	The index looks general because of designing to apply for all projects and for the first implementation. We will start with general criteria, then, more clear indicators could be adopted, depending on its field and after some time.
4	In the work performance evaluation, One recommendation from me is to utilize bidding consultant who was in charge of evaluating the proposal of package.	It is an important point that evaluators in WPE need to understand what were proposed at tender. We will discuss this matter with CPs.

No.	Questions from Participants	Answers of Experts and C/P
5	Your recommendations especially the work performance evaluation is very good and should be utilized at tender evaluation soon. However, I am worried that it will take time to use because currently we do not have the system, thus we cannot utilize the score of WPE at this moment in tender. Do you have any recommendation for such situation?	Since we set the timing of evaluation is just one time at the same as final acceptance, and we have to wait to accumulate some score database before utilizing the score in tender. If we implement phased evaluation, we may utilize the score earlier.
6	Do you have any recommendations to evaluate the similar experiences of contractors?	Thus, we recommend the score of the work performance evaluation and the amount of contract for this purpose. In Japan, we have a detail setting such as recent factor in which recent package is evaluated higher.
7	The Decree 59 stipulates that the site manager should have suitable professional qualification and suitable grading certificate. In case foreign contractors are hired and their qualification are different so how to deal with this situation?	The Decree 59 stipulates that foreign contractors who work in Viet Nam less than 6 months, there is no need to converse their practicing qualification. For those who work in Viet Nam more than 6 months, they will have to converse their practicing qualification, you can refer to Circular 17 for detailed information.
8	The Decree stipulates that the site manager should have suitable qualification. However, there are some cases which site manager have certificate of different major.	Article 53 of Decree 59 clearly states about requirements of site manager with Supervision Qualification or Safety Qualification and experience on construction. So, to obtain the above qualifications, he/she shall have had suitable background/major.

Source: Project team

### **9.2.6 Draft of Construction Contractors Grading System and Construction Contractors Selection Mechanism**

Since construction contractors grading system is described in GLEM in Section 9.2.3, construction contractor selection mechanism is focused in this Section.

#### **(1) Procedure to Prepare Draft of Construction Contractors Selection Mechanism**

Procedure to prepare the draft of construction contractor selection mechanism (herein after referred to as “GLSM”) is discussed in CPMU as follows.

- i) Review of current selection mechanism in Viet Nam
- ii) Study and comparing oversea practices
- iii) Develop draft version of Selection Mechanism
- iv) Dialogue with Viet Nam Construction Industry

#### **(2) Contents of the Draft of GLSM**

Following the review of current situation of construction contractor selection mechanism in Viet Nam, introduction of oversea practice and comparison of construction contractor selection method in 3 countries, the Project team formulated the GLSM with the basic objective below.

- ♦ To explain the importance of engineering aspects in selection phase to every related sectors (Law makers, Decision makers, PO, PMU, and contractors).
- ♦ To help PO/PMU to select a suitable selection method and to set proper requirements for each construction package.
- ♦ To obtain opinions and comments from related sectors to improve selection mechanism by means of showing the engineering evaluation aspects in selecting mechanism to the related sectors (PO, PMU, and contractors).

Contents of GLSM are show in Table 9-33.

**Table 9-33 Contents of Draft of Construction Contractors Selection Mechanism**

Chapter	Title & Contents
	Preface
Chapter 1	Current Selection Mechanism 1.1 Overall 1.2 Basic Policy and Related Regulations 1.3 Selection Mechanism 1.4 Opinion of Related Sector 1.5 Identified Issues
Chapter 2	Introduction of Oversea Practice 2.1 Practice in Japan 2.2 Practice in Singapore 2.3 Comparison to Oversea Practice
Chapter 3	Recommendation 3.1 Strengthen of Evaluation of Engineering Aspect 3.2 Other recommendations (Anti-dumping)

Source: Project team

Chapter 1 explains current selection mechanism in Viet Nam which is composed with participants selection method, contractor selection method and evaluation means. And also opinions from related sector and identification of issues on current selection mechanism are stated in this Chapter. Main issues on current selection mechanism are less attention to ensuring of quality of construction work, small weight of technical score in the evaluation, less attention to introduction of new of high technology, and less linkage of regulation between selection of contractors and execution of construction work.

Chapter 2 explains selection mechanism in Japan and Singapore which is composed with basic scheme, selection method, evaluation method, evaluation technique. Procurement system is regulated in a regulation (Bidding Law, Accountants Law, Procurement Act) which is applied for not only selection of construction contractor but also purchase of goods in 3 countries. However, Japan and Singapore has other regulations to regulate selection system for construction contractors, since selection of construction contractors cannot be the same as other procurements. Japan and Singapore introduce some evaluation techniques in selection stage to ensure quality of construction work such as minimum required point and one-to-one feedback system.

Chapter 3 explains recommendation to improve current selection mechanism which is composed with strengthen of evaluation of engineering aspect and other items. These recommendations were prepared based on review of current selection mechanism and comparison of selection method in 3 countries. These recommendations follow the policy of selection in the Law of Bidding such as competitiveness, fairness, transparency and economic efficiency.

- ♦ Strengthen of Evaluation of Engineering Aspect: Increasing of ratio of technical points, setting of the chart to select tender method and improvement of evaluation criteria are recommended.
- ♦ Other Items: Strengthen of low bidding price investigation, restriction of information sharing among bidders and monitoring of applied selection method is recommended.

The GLSM was compiled and agreed in CPMU meeting, and presented in PCU meeting in April 2017. Then the Project team presented the GLSM in the Fourth JSC meeting and submitted it to MOC in April 2017 with the covering letter.

### 9.2.7 Review of Function of PMU

In construction projects in Viet Nam, there are mainly five (5) stakeholders; (1) decision maker, (2) project owner, (3) PMUs, (4) supervision consultants and (5) construction contractors. Since authority of management of public works has been transferred to PMU by local government with



authorization policy in Viet Nam, PMUs play an important role in managing construction projects especially from the view point of construction administration.

According to result of investigation by CAMA, 1,222 PMUs were operated and 19,425 staffs had worked as staff of PMU as of December 2014.

However, there were frequently issues raised regarding PMU system. There were comments that responsibilities and functions on PMUs were not well defined. In addition, sufficient inspection and examination for PMU has not been implemented and it was concerned that PMUs did not have sufficient knowledge of construction management and contract management. In particular, project owners in rural area not having sufficient knowledge on construction field often nominated incapable PMUs and did not manage PMUs properly. Thus, CCQS Project studied PMUs function and formulated the improvement of regulation on PMUs function.

(1) Current Regulation regarding PMUs Function

In order to improve such situation mentioned above, functions and requirements of PMUs are prescribed in the current construction law (No.50/2014/QH13) system. Function and requirements of PMUs are prescribed in the current construction law (No.50/2014/QH13) and Decree No.59/2015/ND-CP as shown in Table 9-34. Table 9-35 shows comparison of PMU system between previous and current regulations.

PMUs are established to perform project management as project owners or perform the responsibilities and authorities as delegated by project owners. There are two types of PMUs, such as professional PMUs and one-time PMUs. Professional PMUs are divided into two types of sectorial (field-based) PMUs and regional (area-based) PMUs. Professional PMUs act as project owners and they are able to assign more than 2 projects in same type of project. One-time PMUs are public-service organizations under POs and they assign for only 1 project.

Main changes of PMUs function from the Decree No.59/2015/ND-CP are that Professional PMUs are defined and its responsibilities to manage construction projects as PO is stated and certain requirements such as qualification of project managers and required number of staffs of each PMU are established.

**Table 9-34 Regulation for PMU**

Contents	Professional PMU (Sectorial, Regional)	One-time PMU (PMB)
Function/Duty	To manage construction projects as PO.	To manage some tasks of project management delegated by PO.
Established by	Ministers, Heads of Ministerial-level organization, Chairman of Provincial/District People’s Committee	Project owner and investor (Agencies and entities who are assigned by decision makers, Agencies, entities, and individuals who borrow capital for construction investment, PP Project enterprises which are established based on the agreement among investors).
Fund and Type of Project	State fund or public fund	Public fund for high technologies projects or national secretes projects
Number of Project	Assign for more than 2 projects (same administrative are or same route direction, in one sector, same donor).	Assign for 1 project.
Regulation	Regulated by Decision Makers. MOC gives detailed guidelines only.	Regulated by Project Owners.
Requirement	<ul style="list-style-type: none"> <li>- Project Manager must obtain license of project manager suitable with class of the project.</li> <li>- Managers of each professional field shall hold qualifications suitable with project scales, project grades and assign tasks.</li> <li>- Number of staffs (20 or 10)</li> </ul>	

Source: Decree No.59/2015/ND-CP

**Table 9-35 Comparison of PMU System between Previous and Current Regulation**

	Previous System	Current System
Regulation	Decree No.12/2009/ND-CP, Circular 03/2009/TT-BXD	Construction Law (No.50/2014/QH13) Decree No.59/2015/ND-CP, Circular No.16/2016/TT-BXD
Responsible Organization	Each PO by each project	MOC
Classification of PMU	Class is not defined.	◆ <u>Professional PMU</u> - Professional PMU of Ministries, PPCs - Professional PMU of Districts ◆ <u>One-time PMU</u>
Function	To assist PO in project management	◆ <u>Professional PMU</u> To manage construction project, play the role of PO ◆ <u>One-time PMU</u> To manage some tasks of project management delegated by PO
Founder	It is not prescribed.	◆ <u>Professional PMU</u> Ministers, Head of ministerial-level organization, Chairman of provincial/district people's committee ◆ <u>One-time PMU</u> Project owner and investor
Type of Project	It is not prescribed.	◆ <u>Professional PMU</u> State fund or public fund, Assign for more than 2 projects (same administrative are of same route direction, in one sector, same donor) ◆ <u>One-time PMU</u> Public fund for high technologies projects or national secretes project, Assign for 1 project
Requirement	It is not prescribed.	- Project Manager must obtain license of project manager suitable with class of the project. - Managers of each professional field shall hold qualifications suitable with project scales, project grades and assign tasks. - Number of staffs (20 or 10)

Source: Project team

(2) Review of PMU Function on Sample Projects

Review of PMU function on 3 sample projects (shown in Table 9-36) was conducted to identify problems in PMU systems. Selected projects include each type of PMUs and both financial source: Japan Yen Loan and domestic budget, and this helps CCQS Project to have inclusive study regarding PMU system.

**Table 9-36 List of Sample Projects to Review PMU Function**

Name	Project	Type
PMU6	Second Transport Sector Loan for National Road Network Improvement Project (Tham Bridge)	Professional PMU
PMU for Hai Phong Expressway Project	Ha Long – Hai Phong Expressway Project	One-time PMU
PMU of Son La Hydropower Plant	Lai Chau Hydropower	PMU for Special Project

Source: Project team

**Table 9-37 Summary of Interview on PMU**

Item	Professional PMU	One-time PMU	PMU for Special Project
1. Responsibilities between PO/PMU	- Referring Decision issued to clarify responsibility	- Follow practice of Professional PMU	- Referring Decision issued to clarify

Item	Professional PMU	One-time PMU	PMU for Special Project
	between PO/PMU		responsibility between PO/PMU - Chairman of Acceptance Council from PO
2. Responsibilities between - PO/PMU, - CS consultant, - Const. Contractors	- Basically no problem if following regulations  - CS consultant is also responsible for managing project behalf of PO/PMU need the same capacity and ethics as PO	- Regulations and Work plan with detail to-do work list  - CS consultant act as assistant of PO	- PMU directly carry out construction supervision
3. Organization - Number of Staff - How to collect staffs	- Human resource mobilized based on project nature. - Open examination	- Proposal including functions, responsibilities, and authority - Proposal based on project nature - Staffs transferred from public sector	- Staff collected from previous project - Recruit new staffs if necessary
4. Required knowledge for Project management	- On the job training	- Difficult to find capable people because term are limited and transferred from other organization - PMU work on the basis of regulation, try not to violate the law	- Requirement and examination when recruit - On the job training - Relevant training course from government
5. Adaption to current regulation	- No problem	- No problem for big PMU - Small PMU need reorganized	- No problem
6. Capacity of PMU other than number of staff or qualification	- Experience and prestige in coordination with relevant side	- Past record of previous projects - Interrelations among departments and divisions	- Experience - Understanding of international practice
7. Idea to improve PMU capacity	- Sustainable development - Continuous professional trainings for staff	- Training to improve PMU	- Regular training activity - Update change of regulation
8. PMU evaluation	- No regulation	- Random inspection conducted by DOC - No compulsory evaluation system.	- Evaluated but not in term of technical matter
9. Difference between one time PMU / Professional PMU	- NA	- During project completion period, number of staffs cannot be maintained due to budget limitation	- Adaptability of employment

Source: Project team

In addition to the interview on PMUs, questionnaire was dispatched to construction industry to obtain their comments toward PMUs.

**Table 9-38 Comments on PMU from Construction Industries**

Comments
< Overall > - There are many problems regarding the mechanism (model) of PMUs. (VACC) - It's right and suitable to improve capacity of PMU in Viet Nam now. (VECAS) - Sometimes we have experienced the troubles when working with PMU. (OCAJI)

Comments
<p>&lt; Issues and problem &gt;</p> <ul style="list-style-type: none"> <li>- Slow decision-making due to structure of the organization and the lack of knowledge and experience. (OCAJI)</li> <li>- Issues related to management skills/qualification/capacity (OCAJI)</li> </ul>
<p>&lt; Counter Measure &gt;</p> <ul style="list-style-type: none"> <li>- Capacity building in management for PMU is needed (especially training provided for them by foreign experts).</li> <li>- An evaluation system on project management skills of each PMU staff/department with scores given by the contractors and consultants is needed.</li> <li>- The project management must be professionalized and could be done as a service provided by a professional entity (professional PMU or project management enterprise). (VACC)</li> <li>- Projects could apply the bidding to select PMU as other services. (VACC)</li> <li>- PMU should focus on implementing administration management of projects as a special department in local authorities; and the technical management for projects should be done by capable entities. (VACC)</li> </ul>

Source: Project team

### (3) Issues and Problems Identified

Issues and problems on function of PMUs are summarized as shown in Table 9-39. Requirements for PMUs are prescribed in the current construction law, Decree No.59/2015/ND-CP and Circular No.16/2016/TT-BXD. Requirements for PMUs in the current regulations are not enforced to small projects.

**Table 9-39 Issue/Problem on Function on PMU**

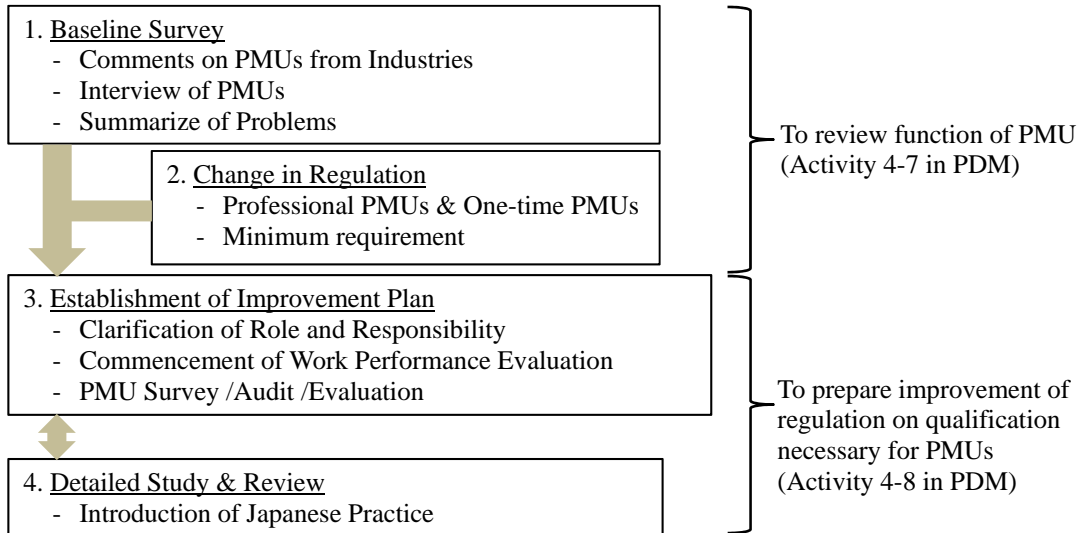
Possible problems or issues, in which improvement is necessary
<p>&lt; Role and Responsibility &gt;</p> <ul style="list-style-type: none"> <li>- Since regulation defines general principles, details of responsibility are complemented by decisions at each field and could be lack of uniformity.</li> <li>- Role and responsibility of SV consultant differs from projects due to capability of PMU. Since SV consultants act as PO occasionally, responsibility and power between PO/PMU and SV consultant is quite important and need be clearly summarized and defined.</li> <li>- Rights and responsible of POs are described in regulations, however, required knowledge/skill to implement those task are not understood well.</li> </ul>
<p>&lt; Capacity or Engineering Skill &gt;</p> <ul style="list-style-type: none"> <li>- Required skill in PMU is considered to be administration matter even though PMU need engineering skill when evaluation of proposal at tender or implementation of project management. There should be improvement in engineering skill at project owner side.</li> </ul>
<p>&lt; Organization &amp; Human Resource &gt;</p> <ul style="list-style-type: none"> <li>- While professional or big PMU do not recognize the difficulty regarding human resource or improving their skill, one-time or small PMUs have a limitation regarding human resource due to its nature such as budget limitation or temporality.</li> <li>- One time PMU has an advantage of adaptability of organization, however, it seems difficult to have incentive for sustainable training for staffs and accumulate their knowledge. This possibly leads to less quality in project management.</li> </ul>
<p>&lt; External Audit &amp; Selection of PMU &gt;</p> <ul style="list-style-type: none"> <li>- There is neither compulsory evaluation nor audit system regarding PMU even though PMU has an important role to deal with public budget.</li> <li>- PMU selection system for a construction package is unclear.</li> </ul>
<p>&lt; Regulations &gt;</p> <ul style="list-style-type: none"> <li>- New circular is not effective for small projects</li> </ul>

Source: Project team

### 9.2.8 Improvement of Regulation on Qualification for PMUs

#### (1) Procedure of Establishment of Improvement of Regulation on Qualification for PMUs

Development process is shown in Figure 9-8. Problems and issues identified are based on practice in the previous regulation system and some items are expected to be improved by adaptation of current regulation.



Source: Project team

**Figure 9-8 Development Process of Improvement of Regulation on Qualification of PMUs**

Thus, CCQS Project drafted plans to obtain further improvement by considering the effect of current regulation system. The summary of counter measure to each identified problems are as shown in Table 9-40.

**Table 9-40 Identified Item and (Tentative) Method for Improvement on PMUs**

Identified Item	Method for Improvement	
	Current Regulation (already incorporated)	Improve Plan
Role & Responsibilities - between POs and PMU - between PO/PMU, CS Consul and Const. Contractors	- Basic role and responsibility of PMU described in Decree 59	<b><u>Plan 1: Clarification of Role and Responsibility of PMUs</u></b> - Recognition of knowledge /skill Necessary for PMUs - Clarification of Delegation and Responsibility among stake holders
Capacity of PMU - Project Management - Engineering skill	- Requirement of Number of Staff and Qualification holders described in Decree 59	<b><u>Plan 2: Commencement of Work Performance Evaluation</u></b>
Improvement in capacity especially One-time or small PMU	- Requirement of Number of Staff and Qualification holders described in Decree 59	- Clarification of case in hiring PMC/Project Management Entities (Included in <b><u>Plan 1</u></b> )
External Audit / PMU evaluation	N/A	<b><u>Plan 3: PMU Survey/ Audit/ Evaluation</u></b> - Compulsory PMU Evaluation - Audit by Third/Independent Party - Establishing PMU Evaluation Mechanism for each Project

Source: Project team

(2) Improvement Plan of Regulation on Qualification for PMUs

Improvement of Regulation on Qualification for PMUs was prepared and attached as output document. In this Section, outline of objective, rational, and recommendation are summarized as follows.

1) Plan 1: Clarification of Role and Responsibility of PMUs

i) Objective

- ♦ PMUs understand their responsibility and required knowledge and skill
- ♦ Each entity knows and understands their role and responsibility to help implement project without confusion MOC experts shall understand the evaluation mechanism, arrange the evaluation meeting and instruct PO/PMUs and supervising consultants at the meeting.

ii) Rational

- ♦ How to implement POs right and responsibility are not well described
- ♦ Previous System is transferred to One time PMUs, which do delegated tasks by POs, and difficulty to improvement their capacity.

iii) Recommendation

- ♦ Understanding of knowledge/Skill Necessary for PMUs
  - Introduction of Japanese PO's guideline for project management
  - Recommendation of establishment of POs guideline in Viet Nam
- ♦ Clarification of Delegation and Responsibility among stakeholders
  - Delegation of role and responsibility are informed to all stakeholders
  - Clarification of Responsible Person

2) Plan 2: Commencement of Work Performance Evaluation (WPE)

i) Objective

- ♦ Assist POs/PMUs both to improve engineering skill and to learn project management process.

ii) Rational

- ♦ Evaluators of WPE check not only construction quality but human resource and management process
- ♦ Process by comparing proposal and actual implementation will enhance POs/PMUs capacity

iii) Recommendation

Basic mechanism including the following contents is explained in the output document.

- ♦ Basic scheme of WPE
- ♦ Difference between WPE and Acceptance
- ♦ Mechanism to Minimize of Discrepancy
- ♦ Outline of Evaluation sheet

3) Plan 3: PMUs Survey/ Audit/ Evaluation

i) Objective

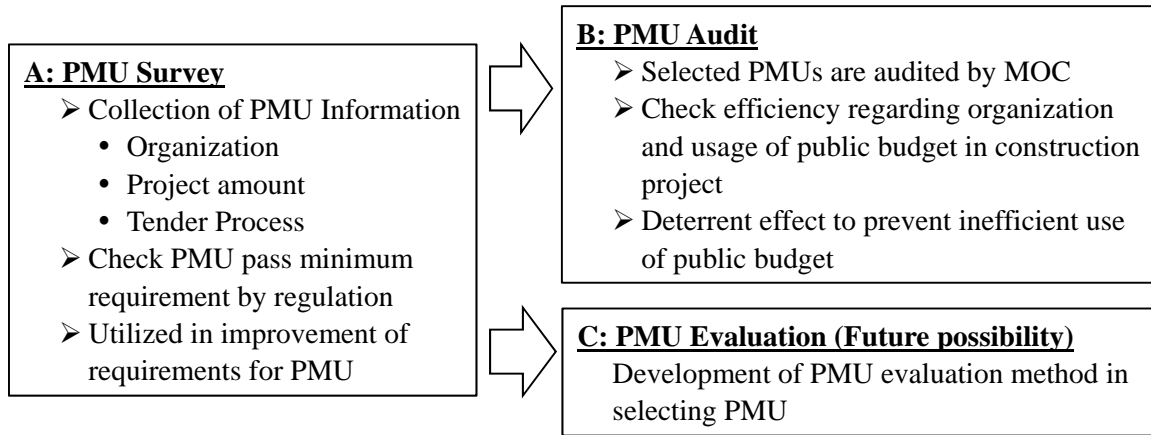
- ♦ Strengthen of checking function by introduction of PMUs Survey/ Audit/ Evaluation for the purpose of ensuring efficient use of public budget.

ii) Rational

- ♦ Professional PMUs are established and minimum requirement need to check
- ♦ Necessity of improvements such as requirements for PMUs and development of PMUs evaluation method

iii) Recommendation

Recommendation in this item is shown in Figure 9-9.



Source: Project team

**Figure 9-9 Basic Scheme of PMU Survey/Audit/Evaluation**

For PMU survey, tentative setting of survey scheme, information to be surveyed, and operation scheme are shown in the output document. For PMU audit, survey scheme, implementation cycle, candidate of implementation body and audit aspect are shown in the output document. For PMU evaluation, selection procedure and candidates for evaluation item to select a PMU are explained.

(3) Contents of Improvement of Regulation on Qualification for PMUs

The contents of prepared manual are shown in Table 9-41. Not only improvement plan but also identified problems are introduced so that its necessity and better understanding of this plan is able to be obtained.

**Table 9-41 Contents of Improvement of Regulation on Qualification for PMUs**

I.	Background and Purpose.....	1
II.	Related Regulation .....	1
III.	Baseline Survey .....	1
	1. Review of Function of PMU .....	1
	- Interviews to PMUs.....	1
	- Comment from Industries.....	3
	- Review of Change in Regulations .....	3
	2. Summary of Problems to be Improved.....	4
	3. Establishment of Improvement Plans .....	5
IV.	Improvement Plan .....	5
	1. Clarification of Role and Responsibility of PMUs (Plan 1).....	5
	(1) Objective .....	6
	(2) Rationale.....	6
	(3) Recommended Measures for Clarification of Role and Responsibility of PMUs.....	6
	A Understanding of knowledge/Skill to Implement Role and Responsibility of POs	6
	B Clarification of Delegation and Responsibility in project .....	7
	2. Work Performance Evaluation (Plan 2).....	9
	(1) Objective .....	9
	(2) Rationale.....	9
	(3) Basic Scheme and Evaluation Method .....	10
	3. PMU survey/Audit/Evaluation (Plan 3) .....	11
	(1) Objective .....	11
	(2) Rationale.....	12

(3) Recommended Measures for PMU Survey/Audit/Evaluation.....	13
A PMU survey.....	13
B PMU Audit .....	14
C PMU Evaluation (Future Plan).....	18

APPENDIX A: Guideline for the implementation of order-related administration' in Japan.

Source: Project team

Improvement of Regulation on Qualification for PMUs was compiled and agreed in CPMU meeting in June 2016. Then the Project team presented it in the meeting between MOC Project Preparation Members (at the time PCU was not organized yet) and JICA team and submitted it to MOC in August 2016 with the covering letter.

### 9.3 Recommendations and Lessons Learned

As having worked in CCQS Project as the Project team since April 2015 for three years and activities in the PDM for Output 4 were complete, the followings are the achievements in Output 4.

- ♦ The Guideline for Evaluation Method on Engineering Capacity of Construction Contractors (GLEM) including the construction contractors grading system and the draft circular for the evaluation method on engineering capacity of construction contractors were compiled in joint efforts of C/Ps and JICA team.
- ♦ Trial of the work performance evaluation on 3-case-study projects was conducted as the first step of the commencement of the work performance evaluation system on the activities of Output 4 (4-2 in PDM).
- ♦ The Draft Guideline for Selection Mechanism of Construction Contractors (GLSM) was compiled in joint efforts of C/Ps and JICA team.
- ♦ The Improvement Plan of Regulation on Qualification for PMUs was compiled in joint efforts of C/Ps and JICA team.
- ♦ Training workshops were held in November and December 2016 at Hanoi, Da Nang and Ho Chi Minh City and in June 2017 at Hanoi, Ho Chi Ming City and Can Tho, in which GLEM, GLSM and outline of the work performance evaluation were presented for disseminations.

In addition, the followings are issues/findings experienced in the activities of Output 4 (CCQS Project).

- ♦ Since scheme and benefits of work performance evaluation were not fully recognized by construction sector, dissemination, development of implementation guideline, and trial implementation became necessary toward legalization and its commencement.
- ♦ While the construction law series are prepared by MOC, the bidding law series are prepared by MPI. Thus, discussion and collaboration work between MOC and MPI is necessary to legalize recommendations of GLSM. The Project team held a meeting with MPI and explained outline and contents of the engineering evaluation method and the evaluation mechanism. They promised to support MOC to develop better construction contractor selection mechanisms.
- ♦ It was a transition period regarding construction law from previous system to current system: 2014 construction law system, which has many improvements and requires numerous changes in construction sectors. In addition, there are some improvement items, which require contractor's self-development before actual application. Thus, phased introduction was necessary to institutionalize the recommended improvements in the CCQS Project and its roadmap was developed with the joint efforts of C/Ps and JICA team.
- ♦ MOC has some projects every year and they play as project owner in these projects. The Project team reviewed evaluation criteria on some MOC's projects which contractor's selection was made in 2016. MOC applied some recommended ideas in the Project such as evaluation of



financial status for evaluation criteria in these MOC's projects.

- ◆ Although proper requirements and its betterments are essential to secure and to improve the quality and safety in construction projects, newly adapted requirements in regulations are occasionally considered as a burden to promote infrastructure developments in Viet Nam, where there is a high demand for social-infrastructure developments. When such voices were raised, CCQS Project developed the 'Notes regarding Current Viet Nam Construction Qualifications' to introduce how to simplify system and also minimizing efforts by using recommendations of CCQS Project as well as introduction of the qualification system in Japan.

With the above achievement and issues, the following actions are expected and recommended to implement by CAMA with related organizations.

- ◆ MOC (CAMA) will materialize and legalize the recommendations of qualification system, registration system and grading system to improve evaluation method of engineering capacity of construction contractors from the year 2018 onwards.
- ◆ MOC (CAMA/SACQI) will disseminate the work performance evaluation by means of training for MOC staffs and seminar/dialogue for PMUs and construction industry and legalize it from the year 2018 onwards.
- ◆ MOC (CAMA) will collaborate MPI to improve selection mechanism of construction contractors.

The roadmap for achievement in Output 4 of CCQS Project and future actions was prepared by the Project team (C/Ps and JICA team). The roadmap for future plan was presented by C/Ps and accepted in the Fifth JSC meeting in October 2017. It was explained again by C/Ps and re-confirmed in the Special meeting for explanation of draft Project Completion Report (PCR) in January 2018.

The roadmap for Output 4 is shown in the Table 9-42.

Lessons learned from the experiences in CCQS Project are stated below for future similar projects.

- ◆ In Viet Nam, legalization is essential to apply anything, however, all sectors including public and private have to adjust themselves according to the new regulation once a legalization is applied. Enough period for dissemination, drafting regulations and some adjustment with related sectors should be secured when planning of legalization. CCQS Project confirmed that some improvements from the previous project: the Quality TCP was adopted in the recent regulation changes.
- ◆ There observed some differences between actual implementations and regulations. Interviews and site-surveys on sample projects as many as possible are recommended to study actual practice. In addition, measures to amend actual implementations would be required other than modifications of regulations.
- ◆ Since MOC officers have enough capacity to draft regulations and disseminate improvements item, projects should focus on the establishment guideline, including main concept of improvements and introduction of foreign practice rather than detailed works such as drafting regulations or actual manuals. In CCQS Project, C/Ps understood the benefits and meanings of some improvements and they introduced them at seminar and also adopted a few items in regulations by themselves even in the transition period of regulations.

**Table 9-42 Roadmap for Output 4 of CCQS Project and Future Actions**

Item	Roadmap (Fiscal Year)											
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
◆Revision of Construction Law	★											
◆Revision of Related Decree and Circular						○	○	○			○	○
◆Engineers Qualification System												
<b>-Current Engineers Qualification System (3 Class, Unified Examination, Exam Database, ID) -</b>												
1.Basic Study(Quality TCP & MOC)	●											
2.Revise of Regulation (Decree59 & Circular17)	●	●	●	●								
3.Public hearing, Dissemination			●	●	●							
4.Commencement of New Qualification System			●	●	●							
5.Follow-up of New Qualification System(Decree 42)				●	●	★						
<b>-Further Improvement (Test Method, Private Qualification, Unification of International Qualification) -</b>												
6. Establishment of Advancd Level Qualification						●	●	●				
7. International Standard (APEC Eng.) & Private Qualification									●	●	●	★
◆Registration of Contractors												
1.Basic Study (Quality TCP & MOC)	●											
2.Circular 11(Obligation of Registration, Publicing)	●	●	●	●								
3.System Design (Classification and Operation)			●	●	●							
4.Establishment of Database (E-government)			●	●	●							
5.Circular 17(&Public Hearing, Dissemination)			●	●	●	★						
6.Update Registration System				●	●	●	●	●	●	●	●	●
◆Grading of Contractors												
<b>-Current Grading System(3 Grade)-</b>												
1.Basic Study(Quality TCP & MOC)	●											
2.Revise of Regulation (Decree59 & Circular17)	●	●	●	●								
3.Commencement of New Grading				●	●	★						
<b>-Mid Term Improvement(Min. Requirement Evaluation, Incorporate of Finance, etc.) -</b>												
4.Establishment of Mid-term Improvement Plan		●	●	●								
5.Public Hearing(Training & Seminar)			●	●	●							
6.Revise of Regulation				●	●	●	★					
<b>-Long Term Improvement (Absolute Score Evaluation by Various Aspects)</b>												
8.Establishment of Plan with Collected Items							●	●	●	●	●	●
9.Revise Regulation & Commencement										●	●	★
◆Work Performance Evaluation												
<b>-Development of Evaluation Mechanism and Dissemination for Implementation-</b>												
1.Establish of Mechanism(Quality/TCR with 4 Trials)	●											
2.Identify Problems / Hearing		●	●	●								
3.Implementation Manual			●	●	●							
4.Dialog with Construction Sector			●	●	●							
5.Trials on Sample Projects				●	●	●						
<b>-Initial Introduction (State funded Class I Projects, Score used as reference) -</b>												
6. Revision of regulation, Mofication of DATA System					●	●	●					
7.Commencement						●	●	●				
8.Public Hearing (Check if transparency and operation )								●	●	●		
9.Modifications to Evaluation Mechanism									●	●		
<b>-Full Introduction (State funded All Project, Score integrated into Contractor's Grading) -</b>												
10.Revise of Regulation & Commencement										●	●	★
◆Selection Mechanism of Construction Contractor												
<b>-Development of Improvement Policy-</b>												
1.Identify Problems / Hearing		●	●	●								
2.Establishment of Guildeline			●	●	●							
3.Dessemination (Dialogue with Const. Sector, Workshop)				●	●							
<b>-Shor term improvement (Chart for tender selection, Mornitoring of Applied Tender) -</b>												
4. Survey of Operations regarding Tender					●	●	●					
5. Adjustment with Related Organizatons					●	●	●					
6. Implementation Guideline for General Evaluation					●	●	●					
<b>-Long term improvement (Increase technical points)-</b>												
7. Study & Adjustment with Related Organizatons							●	●	●	●		
8. Revise of Regulation & Commencement										●	●	★



# **Implementation Guideline for Construction Contractor Work Performance Evaluation**

**April 2017  
Ministry of Construction**

## Preface

The Government of the Socialist Republic of Viet Nam (hereinafter referred to as GOV) maintains sustainable economic growth and implements a large number of major infrastructure development projects. However, the importance of construction management for each construction package is not paid attention properly and subsequently construction quality is often indicated insufficiently.

The GOV requested JICA to run a technical cooperation project and then the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (hereinafter referred to as CCQSP) has been implemented since April 2015.

As for an output of the project activities of CCQSP, the Implementation Guideline for Const.-Contractor Work Performance Evaluation (hereinafter referred to as GLWPE) has been developed for a reference to explain its benefits, scheme and implementation method of this evaluation.

The objectives of GLWPE are:

- (1) To introduce the importance of const.- contractor's performance evaluation to every related sectors (Law makers, Decision makers, PO, PMU, and Contractors).
- (2) To explain the implementation method of const.- contractor's performance evaluation.
- (3) To obtain opinions and comments from related sectors to improve const.- contractor's performance evaluation by means of introducing the content to the related sectors (PO, PMU, and Contractors).

Original mechanism of cont.-contractor work performance evaluation was developed in the Quality TCP<sup>\*1</sup> with numerous discussion in the Ministry of Construction (hereinafter referred to as MOC) at that time both by comparing practice in other countries and by utilizing the findings from trial implementations.

Cont.-contractor work performance evaluation is a new practice in Viet Nam even though it is common practice in oversea countries, and it is necessary to be well understood before its commencement. Thus, CCQSP implements activities toward commencement of cont.-contractor work performance evaluation, such as problem findings for commencement, updating the system to the new regulations, trial implementations, and dissemination.

The GLWPE has been drawn up by experts of MOC and JICA experts together as an outcome of those activities in CCQSP. For the purpose of further improvement, any comments and suggestions provided might be incorporated to the GLWPE if deemed necessary.

\*1 Project for Capacity Enhancement in Construction Quality Assurance: a technical corporation project implemented between the MOC and JICA from May 2010 to December 2013.

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## Chapter 1 General

This guideline specifies the implementation method of contractor work performance evaluation (hereinafter referred to as WPE) for construction packages. Objective and overall scheme to implement WPE is explained in Chapter 1, and evaluation technic and implementation procedure are explained in the Chapter 2.

### 1.1 Outline of Work Performance Evaluation

WPE is to evaluate contractor's work performance at each package with appropriate indexes prepared for the system.

#### (1) Purpose

The aim of WPE is not only to evaluate and give scores of contractors, but to improve the quality in construction by raising both project owner and contractors' awareness towards quality and safety enhancement. WPE will nurture individuals in construction industry and improve the construction quality and safety in the future.

One of the differences comparing other evaluations at tender or current entity's evaluation is to evaluate actual performance for quality of completed construction package.

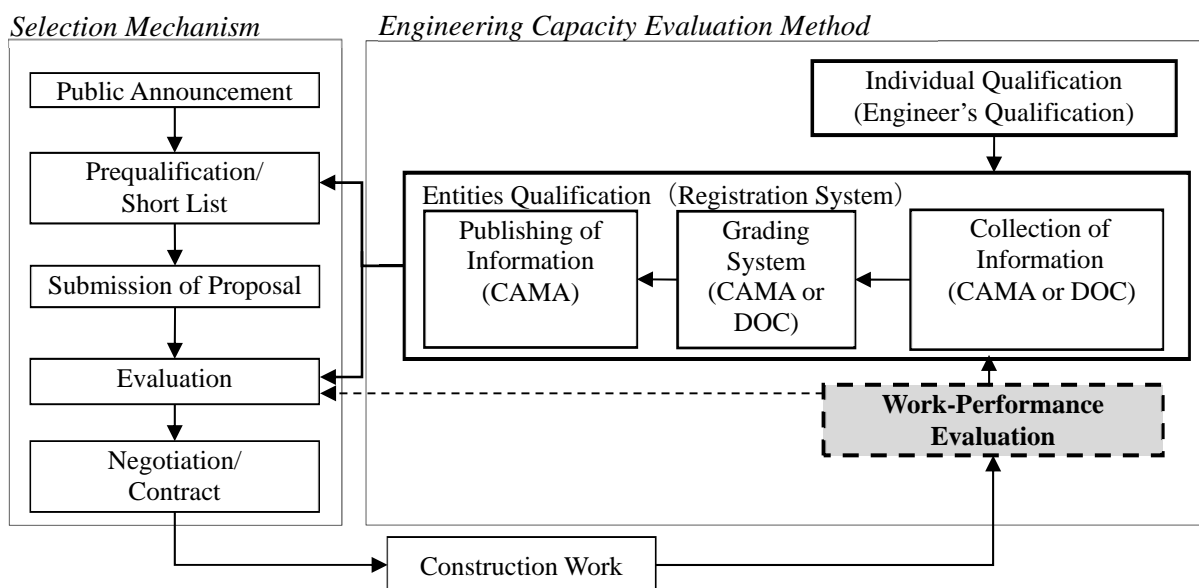
**Table 1-1 Evaluation Items**

Evaluation of Contractor		Scheme
Ability	Finance	Incorporated in EM
	Skill of Staff	Engineer's Qualification
	Management / Equipment	Incorporated in EM
Performance	Quantity of Completed Package	Incorporated in EM
	Quality of Completed Package	WPE (Not incorporated in EM)

#### (2) Outline Structure

WPE is one of the important components to evaluate engineering capacity of contractors.

After confirmation that WPE spread widely and be conducted with fair and transparent manner, it would be encouraged that resulting evaluation scores are used as a source in grading of contractors or evaluating contractors at tender.



**Figure 1-1 Outline Structure of Evaluation Method in Viet Nam**

**(3) Benefits**

Expected benefits are shown in following. WPE itself has benefits and the effectiveness will be stronger if connected with tender.

- ① **Check Construction Quality**  
Overall construction quality, which include not only appearance but Construction Process as well, are checked. In addition, contractor’s behavior after bid are checked.
- ② **Raise both POs and Contractors awareness for Construction**  
In order to score construction package both POs and constructor need to have basic knowledge and evaluation criteria, which will improvement of engineering skill of both side
- ③ **Incentive for Contractor to Improve Construction**  
The score can be used for commendation/prize and priority for next bit award.
- ④ **Method to enforce Contractors to abide by Regulations**  
WPE can be used as index to judge if the package pass the minimum requirement (ex. 60 points).
- ⑤ **Selection of good Contractors**  
WPE is used to distinguish good/poor contractors at tender and/or grading stage.

**1.2 Frame Work**

Framework of WPE for Viet Nam have been established based on oversea practices and current regulations and organization structure in Vietnam.

**Table 1-2 Frame Work of WPE**

No	Items	Details
1	Purpose	Improve Construction Quality and Safety ( In future, Selection of contractor)
2	Organizer	Project Owner
3	Entities to be evaluated	Main Contractor
4	Applied Project	State-funded project s with Grade S, I
5	Evaluators	Project Owner Side(PO or SC) Independent Org. ( having no concern with the contractor)
6	Timing of Evaluation	After completion of construction works
7	Evaluation Index	Scoring method -Construction Resource -Construction Management -Construction Quality
8	Data Management	All data preserved by Project owner and Contractor Final score preserved by Central Gov (CAMA)

**(1) Organizer of WPE**

Project owners shall organize the WPE and their tasks are setting up evaluation meeting, request of selection of evaluators, and notice of evaluation result.

**(2) Contractor to be Evaluated**

Contractors to be evaluated is the prime contractors which have responsibility for managing the quality managing the quality of the works they carried out and parts of works carried out by the subcontractor. (Degree46 Article4) It is not necessary to evaluate subcontractors which are employed by prime contractors.

**(3) Applied Projects**

Applied project is the state-funded construction package in grade specific and grade 1 projects. In the future, project owner with stated-funded construction package in other grades or private project shall be encouraged to conduct WPE.

**(4) Evaluators**

WPE shall be conducted by following persons (hereinafter referred as Evaluators). Two evaluators shall be assigned from project owner’s standpoint and one person shall be assigned from independent Organization Side as follow;

① Project Owner Side

One project owner’s representative in appropriate position who takes a direct responsibility for the construction package shall be assigned. Project manager from PMU is expected to be the most suitable evaluator.

One supervising consultant’s representative who takes a direct responsibility for construction works shall be assigned. For example, chief supervising consultant is expected to be the most suitable evaluator.

② Independent Organization Side (The Supervising Authority)

One official of the supervising authority who takes a responsibility for design appraisal and inspection over acceptance of POs specified in Article 32, Clause 2 of Decree46 shall be assigned.

However, project owners accept another person as a suitable evaluator since the person’s ability is comparable with the person as described in above.

**Table 1-3 Deployment of Evaluator**

Grade	SA	Evaluator		
		PO/PMU	SC* <sup>1</sup>	SA* <sup>2</sup>
S, I	MOC/ MOT/ MARD /MOIT	PO representative in charge of construction works or PMU representative	Chief SC	Quality Control Division in MOC/MOT/MARD/MOIT/MOD/MOS In charge of inspection
II	DOC/DOT/ DARD/DOIT			Quality Control Division In DOC/DOT/DARD/DOIT/ MOD/MOS in charge of inspection

\*1: SC means “Supervising Consultants”,\*2: SA means “Supervising Authority”

**(5) Contents of Evaluation**

Based on the purpose of the Evaluation described above, attention shall be focused on not only results of construction but on construction process as well. Evaluation shall be conducted in terms of contractor’s abilities regarding the following three contents throughout the construction process and on the completed construction works.

- ① Construction Resources indicating manpower and machinery
- ② Construction Management indicating schedule and safety
- ③ Quality Control indicating parameter, quality and workmanship

The project owner shall utilize “Work Performance Evaluation Sheet” corresponding with the project type attached behind this guideline.



**(6) Timing of Evaluation**

Acceptance Inspection (Decree46, Article32) is one event reasonable to be conducted at the same time, considering similarity of contents and participants.

**1.3 Road Map**

WPE is a common practice to improve construction quality in developed countries: however, it is a new item and necessary to be understood by every sector and some concerns regarding objectiveness of evaluation have been collected. Thus, policy and road map to commence WPE has been prepared as shown below.

**(1) Policy to commence WPE**

Phased introduction plan have been established. For the first implementation, it is recommended that the evaluation of class I State budget projects commence first and resulting scores should not be related to tender process. Full introduction in all state budget projects is recommended to commence after confirmation of objectiveness and fairness and resulting score will be able to be used at tender process at this stage.

**(2) Road Map**

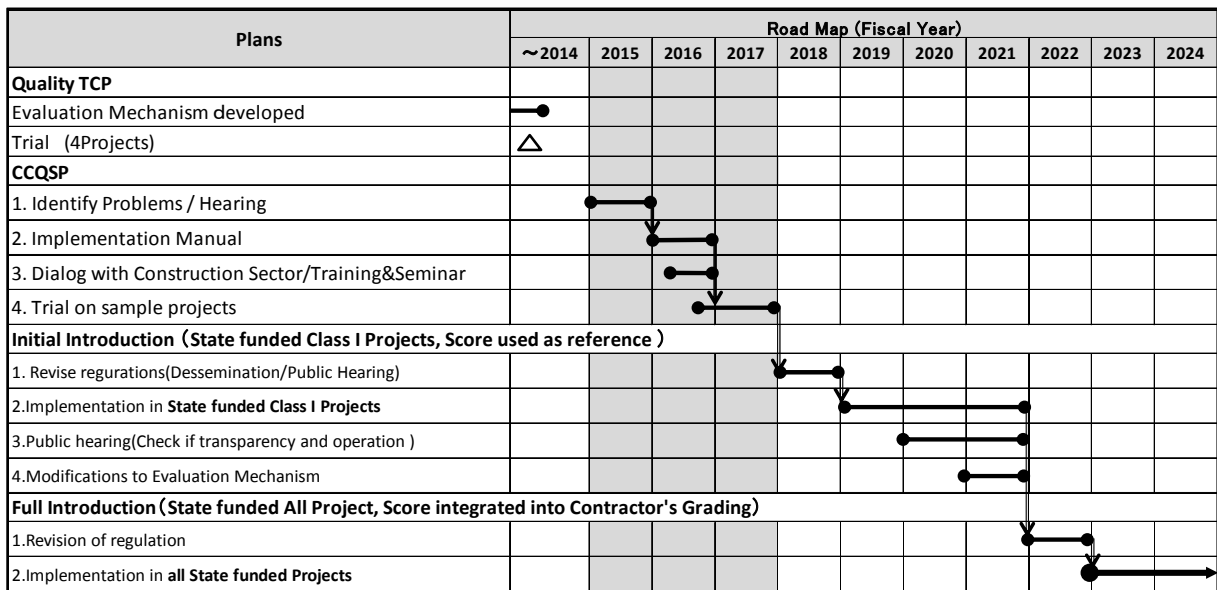


Figure 1-2 Road Map

## Chapter 2 Implementation of Work Performance Evaluation

This chapter explains evaluation technic and implementation procedure, which is necessary for actual implementation of WPE.

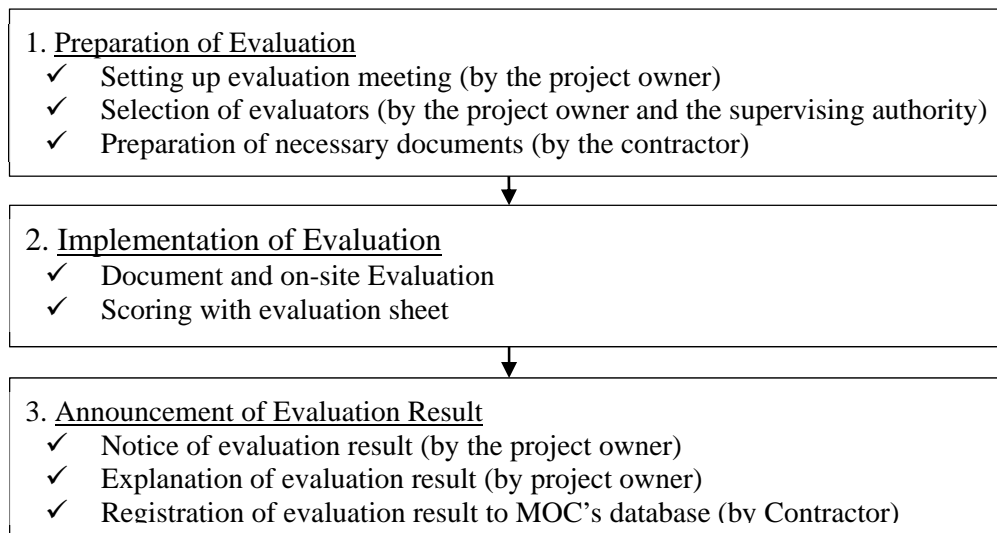
### 2.1 Overall Procedure

#### (1) Basic Scheme

Procedure of the Evaluation is composed with Preparation of Evaluation, Implementation of Evaluation, and Announcement of Evaluation result.

Project owners shall arrange the Evaluation by announcement to the contractor and the supervising authority. Representatives from the project owner and the supervising authority shall play the role of evaluators. Evaluation is conducted at the end of construction works. Result of the Evaluation shall be announced to the contractors and it shall be registered in the registration system in MOC.

Procedure of the Evaluation is shown in Figure 2-1.



**Figure 2-1 Procedure of Work Performance Evaluation**

#### (2) Role and Responsibility of Evaluator

Impartial evaluation lead securing of quality and safety on construction works and improvement of ability of construction contractors. Evaluators shall evaluate contractor's ability in impartially and objectively based on the construction works completed. Evaluators and the contractor are on an equal footing, and Evaluators shall not behave in high-handed. Evaluators shall obey following principles;

- ① Evaluators shall judge fact objectively and fairly based on site situation and documents
- ② Evaluators shall understand that they are on an equal footing
- ③ Evaluators shall observe documents and site situation in detail
- ④ Evaluators shall ask, point out and dictate in definitely
- ⑤ Evaluators shall keep compliance under law and regulations.

## 2.2 Preparation of Evaluation Meeting

### (1) Setting up Evaluation Meeting

Project owners conduct the Evaluation at the completion of the construction, preferably at the same time as the acceptance inspection specified on Article 32 of Decree 46 or agreed. Project owners shall set up evaluation meeting, call for the organizations concerned of evaluators and the site manager of the contractor, and inform schedule and the meeting place.

### (2) Selection of Evaluators

Evaluators are selected from the project owner and the supervising organization as explained in the section 1.2(4).

### (3) Preparation of Documents

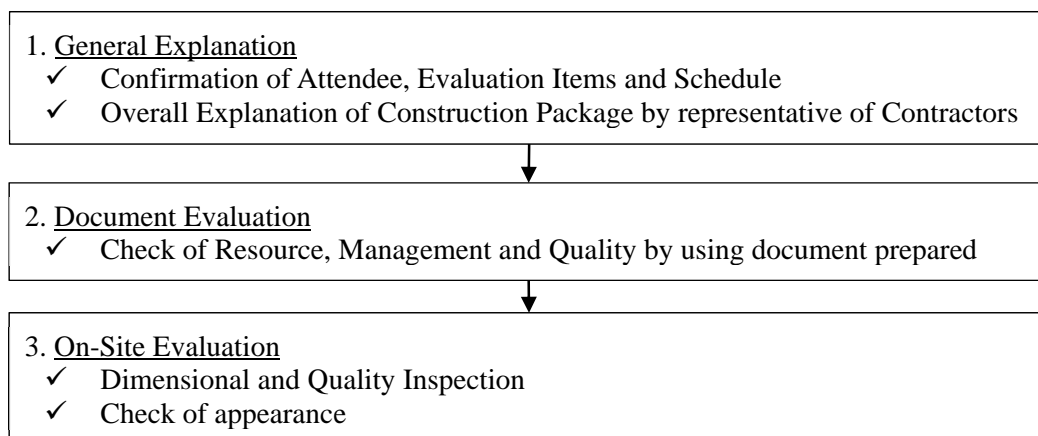
The contractor shall show following documents for the Evaluation. Contractor shall show other relevant documents also, if request. The project owner shall inform name of necessary documents to the contractor by 15 days prior to the evaluation day.

- ① Contract documents
- ② Specifications
- ③ Construction plan
- ④ Schedule charts
- ⑤ Organization structure for the construction work
- ⑥ Construction ledgers for resource, schedule, quality and safety management
- ⑦ Drawings (contract, as build)
- ⑧ Minutes of meetings, Acceptance minutes
- ⑨ Others relevant documents to the construction work
- ⑩ Documents and others which requested by the project owner

## 2.3 Implementation of Evaluation

### (1) Schedule of Evaluation Meeting

Basic meeting schedule is shown in Figure-2. Evaluation meeting consist of three parts: General Explanation, Document Evaluation, and On-site Evaluation.



**Figure 2-2 Evaluation Meeting Schedule**

Site manager and some other managerial class persons of the project shall attend the Evaluation. They shall explain in detail about the package and reply to questions from evaluators.

Each evaluator shall independently evaluate the relevant categories for each construction work accurately and fairly.

During the evaluation meeting, the evaluators shall select samples of construction works to be evaluated in order to enable evaluation to be carried out within reasonable cost and time, and check the dossiers and the completed construction site of selected samples. The samples shall be selected as typically as possible throughout the whole construction works. When evaluators are not able to determine the score of standards only from the dossiers provided and the construction site, evaluators are able to ask any question to other evaluators and the contractor.

## **(2) Scoring Method**

- Evaluators shall utilize the work performance evaluation sheet (Appendix 2), which describes category, supporting items, standard for score, score of each items and remarks.
- Each evaluator evaluate their allocated standards prescribed in this evaluation sheet. For project owner side, each item to be evaluated is allotted to either PMU/PMC or Supervising consultant.
- The supervising authority evaluate all items. At project owner side, PMU/PMC evaluate overall management and its required technical knowledge are by supervising consultant, however, it is depend on the capacity of PMU/MC which items are evaluated either PMU/PMC or Supervising consultant, and this allocation of task could be modified.
- Evaluation category for construction resources and management is common for all kinds of projects. To the contrary, evaluation category of construction quality should be different, and evaluators shall pick up the combination of the work types of “quality” related to the construction works implemented based on the contract.
- In general, evaluation for each supporting category is at 3 grade, which are excellent, satisfied and poor. Normally, ordinary is selected and the reason shall be left in remarks blank if using excellent of poor. However, in supporting category of 17(Control of schedule), 31 & 32(Accident), completed as schedule and no human accident happened is regarded as excellent.
- Project owners may design the weight ratio of each construction work among the category of “quality” based on the ratio among the final contract amount of each construction work.
- If it is requested to revise the work evaluation sheet prescribed in this guideline due to special features of construction works, project owners may add or eliminate standards to this original evaluation sheet in the guideline and also arrange the score distribution with the consent of contractors. In cases where any revision was made as described in the preceding sentence, project owners shall promptly inform the contractor of this revision.
- The scoring with 3-grades for every standard of the evaluation sheet shall be done on the works that are evaluated for the first time. Rectification and correction carried out after the evaluation should not be re-scored.
- Project owners shall average the scores given by two sides, the project owner and the supervising authority side. This average score on the scale of 100 full marks shall be recognized as the final score decided by project owners.

## **2.4 Announcement of Evaluation Result**

### **(1) Notice of Evaluation Result**

The project owner shall promptly notify the evaluation results both to the contractor who undertook the evaluation work and to the state authority upon the receipt of evaluation results from evaluators. The evaluation result should be noticed using the notification form as shown in Appendix II in this guideline.

Result of Construction Work Performance Evaluation		
Issued by		
Date		
Document No.		
Package Name		
Construction Site		
Construction Period	Original: from to	Final: from to
Contract Amount	Original:	Final:
Construction Completed Date		
Evaluation Date		
Contractor Name		
Evaluator (Name/Organization)		
Evaluator (Name/Organization)		
Evaluator (Name/Organization)		
Item	Contents	Score
Construction Resource	Site manager	_____ points / 6 points
	Technical staff	_____ points / 3 points
	Skilled worker	_____ points / 3 points
	Machinery	_____ points / 3 points
Management	General	_____ points / 5 points
	Schedule	_____ points / 20 points
	Safety	_____ points / 10 points
Quality	Parameter	_____ points / 10 points
	Quality	_____ points / 40 points
Total		_____ points / 100 points

**Figure 2-3 Result Notification Form**

**(2) Request of Explanation**

The contractor who have been notified of the evaluation results may request its explanation in writing from the project owner within 14 days (holidays included) from the receipt of the notification.

If explanation was requested as prescribed in this article, the project owner shall provide the explanation to the contractor in writing.

**(3) Registration to MOC's Data Base**

Each contractor shall send the evaluation data to CAMA in MOC when registration according to Decree 59. Copy of the official notification foam shall be attached. The person in charge in CAMA shall input the result of evaluation in the registration system.

The project owner also preserve the evaluation data.

**2.5 Miscellaneous**

**(1) Payment**

Project owners shall pay transportation expense and allowance of evaluators, amount of which can be decided by project owners.

## Appendix 1: Questions and Answers

Since WPE is a new system, many questions have been obtained and answered so far. Those discussion record are beneficial for future participants of WPE, and questions/answers in seminar/workshop and trial-implementation are shown as the following.

<b>1.General</b>			
Q1.How is this guideline established? A1 WPE is common practice in oversea countries, and scheme of WPE in this guideline are designed to suit for construction practice in Viet Nam by referring the practice in Japan, Hong Kong, Malaysia, and Singapore.			
Q2 Difference among WPE, Awarding and Quality Inspection? A2 Acceptance inspection are mainly to inspect the conformity with requirements for public procurement. On the other hand, WPE is the mechanism to improve construction quality, thus, contents of WPE include how the contractors manage its construction and evaluator are not only from the quality division of government but from POs as well. Award Prize have similar purpose of WPE, however, it is not mandatory and not enough to distinguish poor contractors. In oversea, scores of WPE are used for the one of evaluation components for award prize.			
	WPE	Award Prize	Acceptance evaluation
Contents	<ul style="list-style-type: none"> <li>♦ Resource</li> <li>♦ Management</li> <li>♦ (including Safety, schedule)</li> <li>♦ Quality</li> </ul>	<ul style="list-style-type: none"> <li>Quality</li> <li>Safety/Progress/Quality Management</li> <li>New/Advanced technology</li> <li>Assessment by managing units</li> </ul>	Quality
Evaluator	<ul style="list-style-type: none"> <li>♦ Quality Div. of Government</li> <li>♦ POs/SVC</li> </ul>	Standing Agency and other experts	Quality Div. of Government
Evaluatee	Contractor	Project(POs/Consul/Contractor)	Completed object
Timing	All projects at completion	If applied by the project Yearly conducted	All projects at completion
Outcome	Scores of Construction	Award Prize	Payment
Purpose	Incentive for better construction-		Acceptance of public procurement
	Compliance and certification of proposed technics at bid and regulations	-	Compliance and certification of regulations.
Q3 POs also have responsibility and have effect on the project management such as delay of schedule. Is there any reason why evaluatee is only contractor? Q3 In general, POs responsibility is mainly on project management/administration matters, and quality of construction should be secured by contractors, which implement actual construction work. If there is some effect by POs/Consultant other than contractors, those effect should be treated differently. For example, there is not necessary for contractors to have low evaluation score due to the project delay caused by the POs.			
<b>2.Evaluator</b>			
Q1. There are some cases that SC has more experiences and knowledge than PMU/PMC. Is it appropriate that PMU/PMC evaluates the standards? A1. As a project management organization, PMU/PMC need to have overall engineering skills enough to understand the quality of project management or to select contractors at tender. POs should often go to the site in order to make the score effective, which will improve PMU/PMC's engineering capacity.			
Q2 Do we need to set up any qualification/requirement for evaluators? A2. As for PMU/ PMC, we should emphasize how they get involved in the construction management more than the experiences and qualification. This is why the persons in important position who directly communicate with SC and contractors shall be assigned. As for SC, we should emphasize how they manage the construction sites, and chief SC would be the most suitable person. As for SA, we should emphasize their experiences in quality control. They are not directly involved in the project and have to evaluate performance based on their knowledge and experiences. To have an objective evaluation, an engineer at a management level in quality division or an engineer with class I construction supervision are recommended.			

<p><b>3.Evaluated Score</b></p> <p>Q1 Is it unfavorable if each score of evaluators are different even if evaluating the same package?  A1 There is not any problem if the scores of each evaluator are different. SA evaluate the package by comparing other projects with the document prepared, and POs/SVC can evaluate the package more deeply from daily practice or behaviors.</p>
<p><b>4.Evaluation Sheet</b></p> <p>Q1 The ratio of category weight should be considered in case one construction work such as concrete occupies the large part of the contract.  A1 The ratio is recommended to be designed by considering the importance of each construction activities or contract amount of each construction works in category “quality”.</p> <p>Q2 If most construction work was occupied by concrete parts, do we need to create “concrete” in addition to RC and PC? Likewise, do we need to adjust evaluation sheet for each type of project?  A2 It is preferable to revise each evaluation sheet corresponding with category “quality” on evaluation sheet.</p> <p>Q3 Each criteria is rather general and scores can be differ from perceptibility of evaluators.  A3 Evaluation index and standard in this guideline have been designed for the application of various construction type. It is preferable that each responsible ministries should prepare more suitable sheet for intended construction type if necessary.</p> <p>Q4 There can be more items other than indicators currently incorporated in this guideline.  A4 Yes. In oversea, more various items are employed; however, the most basic and important items are selected and employed in this guideline for the initial introduction. In future, it is recommended to employ more items for more comprehensive evaluation. For future evaluation items, employment of new/advanced technology, incident of environment, and quick response to project owner’s inquiry etc. are candidates.</p>
<p><b>5. Timing and Length of Evaluation</b></p> <p>Q1 Timing and length of evaluation can be adjusted for some packages?  A1 For a standard, one time evaluation at completion is employed, and a day evaluation consists of on-site for half-day and document for half day. However, it is recommended to adjust the timing and length of evaluation in consideration of actual project size and items of evaluated amount.  In this guideline, for the purpose of minimize the effort for WPE, one time evaluation at completion is employed; however, phased evaluation especially for big packages is conducted in some oversea practice. If human resource for construction management allows to conduct phased evaluation, phased evaluation is recommended and the evaluation would be more precise.</p>
<p><b>6. Objectiveness of Evaluation</b></p> <p>A1 How to secure the objectiveness?  Q2 To minimize the discrepancy in evaluation score by different evaluator, the following three mechanism are employed.</p> <ul style="list-style-type: none"> <li>◆ Break down categories(supporting items) and detailed standard for each supporting items</li> <li>◆ Independent evaluator involving</li> <li>◆ Role and Responsibility of Evaluator prescribed</li> </ul>



**Appendix 2: Sheet of Evaluation**

【General 1/3】

Category	Subcategory		Supporting Items		No	Standard		Full Score	Input Score	Score <3 steps>			Evaluators			Note	
	Full Score	Subcategory	Supporting Items	Full Score		Standard	Full Score			PMC /PMU	SC	SA					
Construction Resources	6	Site Manager	Qualification	4	1	The site manager assigned was qualified enough to legal regulation and met proposal	4	4	2	0	0	0					
			Communication	2	2	The site manager communicated with a project owner according to contract term; request, record of the meeting, construction diary, acceptance form, technical advice.	2	2	1	0	0	0					
	3	Technical Staff	Qualification	2	3	The technical staff assigned was qualified and experienced enough to legal regulation and met proposal	2	2	1	0	0	0					
			Management	1	4	The technical staff provided proper technical instructions to keep close control of the subcontractor.	1	1	0.5	0	0	0					
	3	Skilled Worker	Quantity	2	5	The number of skilled worker on the site met the request for proposal.	2	2	1	0	0	0					
			Quality	1	6	The skilled workers dealt with the materials and equipments on the site appropriately.	1	1	0.5	0	0	0					
	3	Machinery	Performance	3	7	The machinery prepared met the request for proposal with sufficient performance, quality, and quantity	2	2	1	0	0	0					
					8	There was no trouble with the machinery caused by the method statement on the machinery.	1	1	0.5	0	0	0					

Category	Full Score	Subcategory		Supporting Items		No	Standard		Input Score	Score <3 steps>	Evaluators			Note
		Subcategory	Full Score	Supporting Items	Full Score		Standard	PMC /PMU			SC	SA		
Management (1/2)	25	General	5	Work Plan	3	9	Task allocation and responsibility of staffs became clear in the method statement. The organization chart of skilled workers was reported to the project owner.	1	1	0.5	0	0	0	
						10	Dossiers were appropriately recorded and submitted to the project owner based on the contract.	1	1	0.5	0	0	0	
						11	The work plan was approved by the consultant before construction work.	1	1	0.5	0	0	0	
				12	The construction site was kept tidy and neat every day.	1	1	0.5	0	0	0			
				13	Participated actively in local volunteer activities (e.g. picking up trash, cleaning, road surface) to contribute to relationship local communities.	2	1	0.5	0	0	0			
				14	The method statement on schedule was submitted to the project owner.	6	3	1.5	0	0	0			
				15	Weekly and monthly schedule were submitted to the project owner.	6	3	1.5	0	0	0			
				16	The project was completed on time within the contract term without any delay by the contractor's responsibility.	14	5	-7.5	-20	0	0			
				17	The construction period has been shortened by making the new proposal.	14	3	1.5	0	0	0			
				18	Communicated closely with local communities and dealt with any complaint for a smooth implementation	14	2	1	0	0	0			
				19	The contractor secured appropriate staff holidays and recorded in writing.	14	2	1	0	0	0			
				20	In challenging situations like natural disasters which seemed to affect the whole schedule, the contractor was able to complete works ahead of time.	14	2	1	0	0	0			

Category	Subcategory	Supporting Items	No	Standard		Input Score	Score <3 steps>	Evaluators			Note		
				Standard	Full Score			PMC /PMU	SC	SA			
Management (2/2)		Procedure	3	21	The statement method on the location of guard was archived.	2	1	0.5	0	0	0		
				22	The shop drawing of the temporary structure (scaffolding and support structures) were accepted by the project owner.	1	1	0.5	0	0	0		
				23	Potential risks were identified and its preventative measures were taken.	1	1	0.5	0	0	0	0	
		Control	1	24	There was no dangerous behavior against the labor safety law on the site (no protector of helmet, safety clothes, unsafely driving).	1	1	0.5	0	0	0		
				25	Safety patrol was regularly implemented.	1	1	0.5	0	0	0	0	
		Patrol	3	26	The results of safety patrol was always recorded and stored in the site.	1	1	0.5	0	0	0	0	
				27	The dangerous spot pointed out by the safety patrol was immediately improved	1	1	0.5	0	0	0	0	0
		Inspection	1	28	The temporary structure (scaffolding and support structures) was inspected after they were assembled.	1	1	0.5	0	0	0	0	
				29	Safety training program was implemented for all workers in a timely manner.	1	1	0.5	0	0	0	0	0
		Accident	0	30	There happened at least one injured worker during contract term.	0	0	-2.5	0-5	0	0	0	
				31	There happened at least one dead worker during contract term.	0	0	-5	-10	0	0	0	0

【General 3/3】

Category	Subcategory		Supporting Items		No	Standard		Full Score	Input Score	Score <3 steps>		Evaluators			Note				
	Full Score	Subcategory	Full Score	Supporting Items		Standard	Standard			PMC /PMU	SC	SA							
Quality	50	Parameter	10	Parameter	32	The size of completed parts ranged within tolerance specified in the specification.	2		1	0.5	0								
					33	The position of completed works was set up within tolerance specified in the specification.	2		1		1	0.5	0						
					34	Results of the measurements of completed part of work were appropriately archived.	2		1		1		0.5	0					
					35	The measurement of hidden parts of work were properly archived with photos.	2		1		1		0.5	0					
					36	No directions for the contractor to repair defect was issued in writing.	2	Quality	1		1		0.5	0					
					37	Refer to appendix in each type of works	40	Inspection /Direction	40		40		Input final score of the appendix						
<b>Total</b>					37		100												

**【Work Type: Quality (Pilling)】**

Category	Subcategory		Supporting Items		No	Standard		Input Score	Score <3 steps>		Evaluators			Note	
	Full Score	Subcategory	Full Score	Supporting Items		Standard	Full Score		1	0.5	0	PMC /PMU	SC		SA
Quality [Pilling]	15	Quality	3	Inspection	16	1	Concrete or steel used for materials was confirmed appropriate according to the specification.	1	1	0.5	0				
						2	Depth of excavation, volume of removed soil, change in water level was kept within the appropriate range written in the specification.	1	1	0.5	0				
						3	Welding work was complied with the specifications.	1	1	0.5	0				
						4	Drain work was complied with the specification.	1	1	0.5	0				
						5	No directions for the contractor to repair defect was issued in writing.	1	1	0.5	0				
			2	Direction											

**【Work Type: Quality (Earth Work)】**

Category	Subcategory		Supporting Items		No	Standard			Score <3 steps>		Evaluators			Note
	Full Score	Subcategory	Full Score	Supporting Items		Standard	Full Score	Input Score	Score	PMC /PMU	SC	SA		
Quality [Earth Work]	15	Quality	6	Inspection	4	1	Appropriate measures were implemented to drain rainwater and ground water.	1	1	0.5	0			
						2	The soil was excavated or heaped up and met the requirements of specification.	1	1	0.5	0			
						3	Appropriate compaction and shaping on slope were done in a appropriate timing.	1	1	0.5	0			
						4	Appropriate surface protection was implemented according to the specification.	1	1	0.5	0			
						5	Gradient of cut slope and embankment were complied with the specification.	1	1	0.5	0			
						6	No directions for the contractor to repair defect was is	1	1	0.5	0			
		7	Surface had a smooth and fine finish.	1	1	0.5	0							
		8	Slop surface looks smooth with a surface protection such as a consistent vegetation and concrete sprayed surface.	1	1	0.5	0							
		9	Joints and edges of structures had a smooth and fine finish.	1	1	0.5	0							
		10	It had an excellent overall appearance.	1	1	0.5	0							

**【Work Type: Quality (Reinforced Concrete)】**

Category	Subcategory		Supporting Items		No	Standard			Input Score	Score <3 steps>	Evaluators			Note						
	Full Score	Subcategory	Full Score	Supporting Items		Full Score	Standard	Full			PMC /PMU	SC	SA							
Quality [Reinforced Concrete]	15	Quality	10	Inspection	9	1	Testing of concrete mix formula was carried out, followed by trial mixing, as specified by the shop drawings and specifications.	1		1	0.5	0		0						
						2	The strength, slump, and amount of air in concrete were checked and the results were confirmed appropriate.	1		1	0.5	0		0						
						3	Transportation time, concrete casting speed, drop height of concrete mix, type of vibrating compactor, and curing method were verified to meet the construction requirements and weather conditions.	1		1	0.5	0		0						
						4	When removing formworks, it was ensured that the concrete had already set and gained sufficient strength	1		1	0.5	0		0						
						5	Mill sheets of rebar were confirmed upon inspection.	1		1	0.5	0		0						
						6	Tensile strength and bending strength of rebar were tested.	1		1	0.5	0		0						
						7	Rebars were properly arranged according to the specification.(ex. interval of rebars)	1		1	0.5	0		0						
						8	Spacer bars were arranged into proper locations with sufficient thickness of concrete covering.	1		1	0.5	0		0						
						9	Appropriate process was made for concrete joints.(ex. overlapping length)	1		1	0.5	0		0						
						10	Direction	1	No directions for the contractor to repair defect was issued in writing.	1		1	0.5	0		0				
						11	Workmanship	5	Appearance	5	11	Concrete surface had a smooth and fine finish.	1		1	0.5	0		0	
						12					Joints and edges of concrete had a smooth and fine finish.	1		1	0.5	0		0		
						13					Structures of concrete were aligned neatly in a straight line.	1		1	0.5	0		0		
						14					14	There was no crack or water leakage in concrete structures	1		1	0.5	0			
						15					15	It had an excellent overall appearance.	1		1	0.5	0		0	

**【Work Type: Quality (Prestressed Concrete)】**

Category	Full Score	Subcategory		Supporting Items		No	Standard			Score <3 steps>			Evaluators			Note	
		Subcategory	Full Score	Supporting Items	Full Score		Standard	Full Score	Input Score	Score	PMC /PMU	SC	SA				
Quality [Prestressed Concrete]	15					Inspection	9	10	1	Testing of concrete mix formula was carried out, followed by trial mixing, as specified by the drawings and specifications.	1	1	0.5	0		0	
									2	The strength, slump, and amount of air in concrete were checked and the results were confirmed appropriate.	1	1	0.5	0		0	
									3	Transportation time, concrete casting speed, drop height of concrete ix, type of vibrating compactor, and curing method were verified to meet the construction requirements and weather conditions.	1	1	0.5	0		0	
									4	When removing formworks, it was ensured that the concrete had already set and gained sufficient strength	1	1	0.5	0		0	
									5	Mill sheet of rebar were confirmed upon inspection.	1	1	0.5	0		0	
									6	Tensile strength and bending strength of rebar were tested.	1	1	0.5	0		0	
									7	Welding work of rebar was carried out according to the specification.	1	1	0.5	0		0	
									8	Tensioning and grouting was properly implemented according to the specification.	1	1	0.5	0		0	
									9	Sheaths and grout hoses and anchorages were positioned appropriately.	1	1	0.5	0		0	
									10	No directions for the contractor to repair defect was issued in writing.	1	1	0.5	0		0	
									11	Concrete surface had a smooth and fine finish.	1	1	0.5	0		0	
									12	Joints and edges of concrete had a smooth and fine finish.	1	1	0.5	0		0	
									13	Structures of concrete were aligned neatly in a straight line.	1	1	0.5	0		0	
									14	Surface of concrete slab was flat.	1	1	0.5	0		0	
									15	It had an excellent overall appearance.	1	1	0.5	0		0	



**【Work Type: Quality (Metal Structure)】**

Category	Full Score	Subcategory	Full Score	Supporting Items		No	Standard			Input Score	Score <3 steps>	Evaluators			Note				
				Supporting Items	Full Score		Standard	Full Score	PMC /PMU			SC	SA						
Quality [Metal Structure]	10	Quality	10	9	Inspection	1	Correct type of steel materials was used according to the specification.	1	1	1	0.5	0	○	○					
						2	Mill sheet of steel was confirmed before steel was used.	1	1	0.5	0	○	○						
						3	The measure for prevention of corrosion was implemented.	1	1	0.5	0	○	○						
						4	Welding work was carried out according to the specification.	1	1	0.5	0	○	○						
						5	Tightness of bolts was checked and its record has been properly kept.	1	1	0.5	0	○	○						
						6	Bolt tension and measuring devices were correctly calibrated.	1	1	0.5	0	○	○						
						7	The type, size and number of bolts and washers met the specification and shop drawing.	1	1	0.5	0	○	○						
						8	Material of the painting or proactive layer was used according to the specification.	1	1	0.5	0	○	○						
						9	Painting was done in a good work environment according to the material specification.	1	1	0.5	0	○	○						
						10	Direction	1	No directions for the contractor to repair defect was issued in writing.	1	1	0.5	0	○	○				
						11	Appearance	5	5	Appearance	1	There was no damage or rust on the surface of steel.	1	1	0.5	0	○	○	
						12					Steel surface was flat.	1	1	0.5	0	○	○		
						13					Paint work was smooth and consistent.	1	1	0.5	0	○	○		
						14					Welding work was smooth and consistent.	1	1	0.5	0	○	○		
						15					1	It had an excellent overall appearance.	1	1	0.5	0	○	○	

**【Work Type: Quality (Asphalt Pavement)】**

Category	Subcategory	Supporting Items		No	Standard			Score <3 steps>			Evaluators			Note
		Full Score	Supporting Items		Full Score	Standard	Full Score	Input Score	PMC /PMU	SC	SA			
Quality [Asphalt Pavement]				1	CBR value of roadbed was reviewed or measured.	1	1	0.5	0					
				2	Compound of materials such as ratio of water and cement content, and volume of cement was archived.	1	1	0.5	0					
				3	Compaction of roadbed was done according to the specification.	1	1	0.5	0					
				4	Process on pavement joints was made according to the specifications	1	1	0.5	0					
				5	Proof rolling of roadbed was done to detect and rectify defects	1	1	0.5	0					
				6	Trial mixing was conducted to verify that the asphalt mixture complied with the design specifications	1	1	0.5	0					
				7	Temperature of mixture was strictly controlled (checked upon the dispatch from the plant, arrival at the site, start of paving work)	1	1	0.5	0					
				8	Appropriate methods of paving and delivering mixture have been selected considering weather conditions of the site	1	1	0.5	0					
				9	Bitumen was added as prescribed in the specification.	1	1	0.5	0					
				10	No directions for the contractor to repair defect was issued in writing.	1	1	0.5	0					
				11	Pavement surface was consistently flat.	1	1	0.5	0					
				12	Transition from pavement to structures was smooth.	1	1	0.5	0					
				13	Thorough work was done on the end treatment of pavement.	1	1	0.5	0					
				14	Water was smoothly drained to the gutter and basin.	1	1	0.5	0					
				15	It has an excellent overall appearance	1	1	0.5	0					

**【Work Type: Quality (Concrete Pavement)】**

Category	Full Score	Subcategory	Full Score	Supporting Items	Supporting Items	Full Score	No	Standard			Score <3 steps>	Evaluators			Note	
								Standard	Full	Input Score		PMC /PMU	SC	SA		
Quality[Concrete pavement]	10		10	Inspection		9	1	1	1	1	0.5	0	0	0		
							2	1	1	1	0.5	0	0	0		
							3	1	1	1	0.5	0	0	0	0	
							4	1	1	1	0.5	0	0	0	0	
							5	1	1	1	0.5	0	0	0	0	
							6	1	1	1	0.5	0	0	0	0	
							7	1	1	1	0.5	0	0	0	0	
							8	1	1	1	0.5	0	0	0	0	
							9	1	1	1	0.5	0	0	0	0	
							10	1	1	1	0.5	0	0	0	0	
	5	Workmanship	5	5	Appearance	5	11	1	1	1	0.5	0	0	0	0	
							12	1	1	1	0.5	0	0	0	0	
							13	1	1	1	0.5	0	0	0	0	
							14	1	1	1	0.5	0	0	0	0	
							15	1	1	1	0.5	0	0	0	0	

【Work Type: Quality (Equipment)】

Category	Full Score	Subcategory		Supporting Items		No	Standard			Input Score	Score <3 steps>	Evaluators			Note
		Full Score	Subcategory	Supporting Items	Full Score		Standard	Full Score	PMC /PMU			SC	SA		
Quality[Equipment]	10		Quality	10	Inspection	1	Electrical generator had sufficient electrical power output according to the specification.	1	1	1	0.5	0			
						2	Transformer had sufficient capacity according to the specification.	1	1	0.5	0				
						3	Turbine had sufficient capacity according to the specification.	1	1	0.5	0				
						4	Power transmission wire had sufficient capacity according to the specification.	1	1	0.5	0				
						5	The preliminary test was conducted at plant or construction site and the performance of the entire system was confirmed appropriate.	1	1	0.5	0				
						6	No directions for the contractor to repair defect were issued in writing.	1	1	0.5	0				
						7	There was no damage or rust on the equipment.	1	1	0.5	0				
						8	Maintenance and inspection were taken into account when equipment was installed.	1	1	0.5	0				
						9	Equipment and their wiring were located systematically.	1	1	0.5	0				
						10	It had an excellent overall appearance.	1	1	0.5	0				

**【Work Type: Embankment】**

Category	Full Score	Subcategory		Supporting Items	No	Standard		Input Score	Score		Evaluators			Note	
		Subcategory	Full Score			Standard	Full Score		<3 steps>	PMC /PMU	SC	SA			
Quality [Embankment I]	20	Quality	16	Inspection	15	1	The soil was excavated or heaped up met the requirements of specification.	1	1	0.5	0				
						2	Appropriate compaction and shaping on slope were done in a appropriate timing.	1	1	0.5	0				
						3	Cracks and damage on slope was not confirmed because of appropriate compaction and shaping.	1	1	0.5	0				
						4	The thickness of compacted surface was kept within an appropriate range.	1	1	0.5	0				
						5	Deflection test (proof rolling) was done according to the specification.	1	1	0.5	0				
						6	Appropriate tests for materials were done according to the specification.	1	1	0.5	0				
						7	Soil around structures was treated and compacted carefully.	1	1	0.5	0				
						8	The bottoms of drain pipes were smooth and in uniform gradient.	1	1	0.5	0				
						9	Slope protection was done at the appropriate sections.	1	1	0.5	0				
						10	Material was sprayed with the same thickness consistently for slope protection.	1	1	0.5	0				
						11	Slope protection was done, considering weather and temperature.	1	1	0.5	0				
						12	Appropriate finish was applied on the slope surface (incl. removal of stones and root fragments from the soil)	1	1	0.5	0				
						13	Edges of adjacent sheets of wire net were overlapping according to the specification.	1	1	0.5	0				
						14	Thickness of concrete/mortar layer was properly checked to ensure its consistency.	1	1	0.5	0				
						15	Drain holes were functioning well.	1	1	0.5	0				
						16	No directions for the contractor to repair	1	1	0.5	0				

Category	Full Score	Subcategory		Supporting Items		No	Standard			Score <3 steps>		Evaluators			Note		
		Subcategory	Full Score	Supporting Items	Full Score		Standard	Full Score	Input Score	PMC /PMU	SC	SA					
						17	Transition from road/natural ground to slope top/toe was smooth.	1		1	0.5	0			o	o	
		Workmanship	4	Appearance	4	18	Gradient of cut slope and embankment was smooth.	1		1	0.5	0			o	o	
						19	Slope protection was consistent and smooth.	1		1	0.5	0			o	o	
						20	It had an excellent overall appearance.	1		1	0.5	0			o	o	

【Architecture】		Category		Subcategory		Supporting Items		No		Standard		Input Score		Score <3 steps>		Evaluators			Note
Category	Full Score	Subcategory	Full Score	Supporting Items	Full Score	No	Standard	Full	Input Score	Score <3 steps>	Score <3 steps>	PMC /PMU	SC	SA	Note				
Quality【Architecture】	20	Quality	10	Inspection	9	1	Internal/external wall met the specification in terms of material and strength, etc.	1		1	0.5	0							
						2	Ceiling met the specification in terms of material and strength, etc.	1		1	0.5	0							
						3	Door met the specification in terms of material and strength, etc.	1		1	0.5	0							
						4	Coating of interior/exterior wall met the specification in terms material and environmental condition.	1		1	0.5	0							
						5	Accessories such as fixture met the specification in terms of material and strength, etc.	1		1	0.5	0							
						6	Connect type of electrical wiring was installed according to the specification in terms of material and performance, etc.	1		1	0.5	0							
						7	Distribution board was installed according to the specification in terms of performance.	1		1	0.5	0							
						8	Applies equipment met the specification in terms of performance.	1		1	0.5	0							
						9	The preliminary test was conducted at plant or construction site and the performance of the entire system was confirmed appropriate.	1		1	0.5	0							
						10	Material was sprayed with the same thickness consistently for slope protection.	1	Direction	1	0.5	0							
						11	The floor had no stain marks, visible damages, water leaking, and finishing was flat.	10	Appearance	10	1	0.5	0						
						12	The internal/external wall had no stain marks, visible damages, water leaking, and finishing was flat.				1	0.5	0						
						13	The ceiling had no stain marks, visible damages, and water leaking, and finishing was flat.												

Category	Subcategory		Supporting Items		No	Standard			Score <3 steps>			Evaluators			Note
	Full Score	Subcategory	Full Score	Supporting Items		Full Score	Input Score	Standard	Full	Input Score	Score <3 steps>	PMC /PMU	SC	SA	
					14	1	There was no visible gap between the door frame and wall and the window frame and wall.	1	1	0.5	0		0	0	
					15	1	It was easy in opening, closing, and locking the door and window, and there was no squeaky sound during swinging the door or widow.	1	1	0.5	0		0	0	
					16	1	The lighting was aligned neatly and illuminated clearly.	1	1	0.5	0		0	0	
					18	1	Maintenance and inspection were taken into account when equipment was installed.	1	1	0.5	0		0	0	
					19	1	Equipment and their wiring were located systematically.	1	1	0.5	0		0	0	
					20	1	It had an excellent overall appearance.	1	1	0.5	0		0	0	



## Chapter 10 Enhancement of Contract Management (Output 5)

### 10.1 Outline of Output 5

Policy Capacity for contract management of construction contractor works is enhanced.

Problems in contract management of construction contractor works in Viet Nam are compiled and shown below.

#### Problems in Contract Management of Construction Contractor Works

- ♦ Contract implementation in public construction contractor works is sometimes carried out unilaterally.
- ♦ In loan projects financed by Japan International Cooperation Agency (JICA), World Bank (WB) and other international organizations, contract documents of construction contractor works are usually taken from FIDIC (the International Federation of Consulting Engineers). However, the legal documents in construction field in Viet Nam sometimes prevail over the contract documents during implementation of works.
- ♦ The employers and staff from the organization (State Audit etc.) reviewing payment in public construction projects in Viet Nam do not have enough knowledge on FIDIC contract and subsequently contract arguments and disputes with the contractors last long.

In addition, FIDIC contract seems not disseminated sufficiently yet in Viet Nam, which might be another issue. Viet Nam Engineering Consultant Association (VECAS) is a member of FIDIC in Viet Nam and therefore popularity of FIDIC contract will be checked together with the Counterparts (C/Ps) and VECAS. Furthermore, comments on contract documents of construction contractor works for major domestic construction projects will be collected.

To find out present conditions on construction contractor works, each two to three construction projects (JICA loan projects and major domestic projects) shall be selected, and contract documents and contract management in these construction contractor works shall be reviewed. Then differences and gaps between these projects shall be summarized by comparing with FIDIC contract (red book as for building and engineering works designed by the employer) as well as referring the regulations (Construction Law / 2014 / QH13, Decree 37 / 2015 / ND-CP and related circulars) in Viet Nam. Major differences are shown below.

Differences in Contract Documents and Contract Management of Construction Contractor Works		
FIDIC Contract	Contract in JICA Loan Project	Contract in Domestic Project
Variations are evaluated by Engineer	Similar to FIDIC	Variations are evaluated by PO/PMU
Payment are certified by Engineer	Similar to FIDIC	Payment are certified by PO/PMU

PO: Project Owner, PMU: Project Management Unit

Those differences and gaps shall be analyzed and guidelines shall be formulated in the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project).

Comparison and analysis of contract documents and contract management



#### **Formulation of Guideline on Contract Management and Contract Alteration of Construction Contractor Works**

Sharing considerations of the guideline with C/Ps, the guideline on contract management and contract alteration of construction contractor works shall be presented and discussed in the Project Coordination Unit (PCU) and disseminated through trainings and seminars, so that capacity in State Authority for Construction Economics (SACE, upgraded from Construction Economics Department (CED) in July 2017) and State Authority of Construction Quality Inspection (SACQI) for contract management of construction contractor works is enhanced. During the Project, the guideline shall be reviewed and revised as necessary.

With these activities, rules and system during implementation of construction projects could be improved.



### 10.2.1 Identification of Problems on Contract Management

To identify problems on contract management in Viet Nam, several CPMU meetings were held with some topics.

(1) Comparison of Contract Formation and Role of Engineer

The Multilateral Development Banks (MDB) Harmonized Edition FIDIC 2010, the Public Sector Standard Conditions of Contract for Construction Works (PSSCOC) 2014 issued by Building and Construction Authority (BCA) in Singapore and the Standard Conditions of Contract (SCC) for Public Works in Japan were compared in terms of contract formation and role & power of the Engineer / Superintending Officer (SO) / the Employer. The comparison was presented by the expert in July 2015, then the discussions were carried out in CPMU meetings.

[Contract Formation]

Contract Conditions	Summary
<p>FIDIC Employer – Engineer – Contractor</p>	<p>Definition 1.1.2.4  <b>“Engineer”</b> means the person appointed by the Employer to act as the Engineer for the purposes of the Contract and named in the Contract Data, or other person appointed from time to time by the Employer and notified to the Contractor under Sub-Clause 3.4 [Replacement of the Engineer].  <u>May be consultant firm or individual.</u>  <u>Actual practice is often contracted to consultant.</u></p>
<p>PSSCOC Employer – Superintending Officer – Contractor</p>	<p>Definition 1.1 (ab)  “Superintending Officer” means the person, firm or corporation appointed as such by the Employer for the purposes of the Contract.  <u>May be consultant firm or individual.</u>  <u>Actual practice is appointed and/or contracted either one, depending on characteristics of projects.</u></p>
<p>SCC Employer – (Supervisor) - Contractor</p>	<p>Supervisor has similar power to FIDIC and PSSCOC.  <u>The Employer nominates staff as supervisor in the employer’s organization. Assistants from consultant may be contracted, as necessary.</u></p>

[Role & Power of the Engineer / SO / the Employer]

Contract Conditions	Summary
<p>FIDIC  Clause 3.1 Duty and Authority  Clause 3.3 Instruction  Clause 3.5 Determinations  Clause 12.3 Evaluation</p>	<p>In FIDIC, the Engineer is considered to be fair and reasonable but the power is limited as the Engineer is required to obtain the approval of the Employer before exercising...(3.1).  Nonetheless, the Engineer shall respond to the Contractor within 28 days upon receipt.</p>
<p>PSSCOC  Clause 2.1 Superintending Officer’s Authority  Clause 2.5 Instruction by Superintending Officer</p>	<p>In PSSCOC, the Superintending Officer is considered to be fair and reasonable but the power is limited if limitations on the authority of the Superintending Officer are set out in the Appendix.</p>

Contract Conditions	Summary
Clause 20.1 Valuation Method	Time frame of responses between parties is similarly provided, like reply shall be made within certain days.
SCC Japan	In SCC, since the Supervisor belongs to the organization of the Employer, he acts on behalf of the Employer. Time frame of discussions between the Employer and the Contractor for variations is fixed and if agreement is not reached within the time frame, the Employer determines, which is similar to FIDIC & PSSCOC.

In Viet Nam, there are several models of project implementation and referring the models above, suitable ones shall be established by customizing and fitting to the conditions in Viet Nam.

- (2) Differences in Viet Nam Contract and FIDIC Contract and Experience of Contractual Disputes  
Discussions were made in CPMU meetings in regard to differences between Viet Nam contract and FIDIC contract, and the table below shows results of the differences mainly presented by C/Ps.

**Table 10-3 Differences in Viet Nam Contract and FIDIC Contract**

Items	Viet Nam Contract	FIDIC Contract
1. Role of PO/PMU/PMC* or Engineer	Some staffs in PO/PMU/PMC* are not competent to perform responsibility.	The Engineer shall have enough capacity.
2. Warranty period	24 months for special and grade 1 projects (following the regulations)	12 months
3. Payment time	For state budget projects: within 14 days For ODA and international projects: same as FIDIC	56 days after the Engineer certification
4. Advance payment return	Advance payment has to be returned when 80% contract amount is paid by project owner.	Generally before reaching progress 90%
5. Guarantee for advance payment	Guarantee has to be done for advance payment if it is more than 1 billion VND.	Guarantee has to be submitted for any amount of advance payment.
6. Regulation of price adjustment	If advance payment exceeds the minimum standard amount (10-20% of total contract amount), price adjustment will not be in the contract.	No such restriction

\*PMC: Project Management Consultant

Source: Project team

The above has been agreed to review further and results shall be incorporated into guideline of contract management.

In regard to the experiences in contractual disputes, C/Ps presented as follows, which shall be looked into for finding out solution for future projects.

- ♦ Compensation for delay: Time may be extended and compensation is often in dispute.
- ♦ Price adjustment due to changes in the government's mechanism and policy
- ♦ Base date for price escalation which is not mentioned clearly in the contract
- ♦ Formula of price escalation due to the differences in currency and reference source

- (3) Review of Project Formation in Viet Nam

Two projects were reviewed through the decisions in 2011 and contents are as follows.

1) Ministry of Agriculture and Rural Development (MARD) Decision 666 in 2011

Description		Implementing party	Package no.	Equivalent amount USD x 1000	%
I - 1	Packages for Land Acquisition, PM, FS & Design Appraisal etc.	PO / PMU	5	125	3.4
I - 2	Contingency	PO / PMU	1	330	9.1
II	Packages for Survey & FS	PO / PMU	3	31	0.9
III- A	Constructions	contractors	6	2,539	70.0
III- B	Equipment	suppliers	6	432	11.9
III- C	Consultancy	consultants	5	123	3.4
III- D	Others (Insurance & Audit)	others	2	47	1.3
Total				3,627	100

2) Prime Minister (PM) Decision 1765 in 2011

Description		Implementing party	Package no.	Equivalent amount USD x 1000	%
I	Consultancy	consultants	10	27,665	3.4
II	Constructions	contractors	13	512,860	62.2
III	Equipment	suppliers	13	279,245	33.9
IV	Others (Insurance)	others	2	5,069	0.6
Total				824,839	100

From the above tables, comments are shown below, which could be points to improve.

- ♦ Packages are too many.
- ♦ It is recommended that main consultant shall cover overall responsibility and sub-consultants be employed under main consultants.
- ♦ Consultant fee seems too small.
- ♦ There are many contractors in MARD projects, whereas there is main contractor in PM projects. The latter may be recommended to be model for project formation.

(4) Comparison of Construction Contract in Decree 37 and FIDIC

Comparison in Decree 37/2015/ND-CP and MDB Harmonized Edition FIDIC in 2010 was exercised by JICA expert and presented in CPMU meetings, highlighting differences as follows.

**Table 10-4 Comparison in Decree 37 and FIDIC**

Decree 37	FIDIC	Difference
<b>Response between Parties</b>		
Article 7 Management of Construction Contract Performance Clause 4	Many clauses (typically 3.5, 11.9, 14.6, 20.1) Determinations, Performance Certificate, Issue of Interim Payment Certificate, Contractor's Claim	♦ Decree 37 requires that responses shall be made within 7 days after receipt, whereas FIDIC specifies that longer durations (21 days or 28 days) are allowed to respond in most cases.
<b>Applicable Law and Language</b>		
Article 11 Applicable Law and Language used in a Construction Contract (ref Construction Law: CL Article 138, 141)	Clause 1.4 Law and Language	♦ In Decree 37, in case the contract with the participation of the foreign party, used language is Vietnamese and a foreign language which is agreed by parties and if agreement is not reached, English will be used. In Circular 9 / 2016 / TT-BXD there is stipulation for ruling language. In FIDIC, the ruling language shall be stated in the Contract Data at the time of tender.

Decree 37	FIDIC	Difference
<b>Payment</b>		
Article 19 Construction Contract Payment Article 28 Rights and Obligations of the Contractor (Work execution) Clause 1 item c) (ref CL article 144)	Clause 14.6, 14.7 & 14.8 Issue of Interim Payment Certificate, Payment, Delayed Payment	♦ In Decree 37, payment shall be made within 14 days from receipt of documents, whereas in FIDIC, the Engineer shall certify the amount within 28 days after receipt of documents and the Employer shall pay the amount within 56 days after the Engineer received the documents.
<b>Rights and Obligations of the Employer (&amp; the Engineer) for Work Execution Contract</b>		
Article 27 Rights and Obligations of the Employer (Work execution) (ref CL Article 107)	Clause 2 & 3 The Employer The Engineer	♦ In Decree 37, the Employer shall appoint key personnel or hire organizations or individuals for management of contract, whereas in FIDIC the Employer shall appoint the Engineer to perform the duties assigned in the Contract.
<b>Rights and Obligations of the Contractor for Work Execution Contract</b>		
Article 28 Rights and Obligations of the Contractor (Work execution) Clause 1	Clause 2.1, 3.3 Right of Access to the Site, Instruction of the Engineer	♦ In Decree 37, the Contractor has rights to refuse the works if the works are beyond the contract, whereas in FIDIC the Contractor shall comply with the instructions by the Engineer.
<b>Rights and Obligations of the Employer (&amp; the Engineer) for EPC and Turnkey Contract</b>		
Article 31 & 33 Rights and Obligations of the Employer (EPC & Turnkey Contract) (ref CL Article 107)	Clause 2 & 3 The Employer, The Engineer	♦ In Decree 37, the Employer shall appoint key personnel for management of contract, whereas in FIDIC the Employer shall appoint the Engineer to perform the duties assigned in the Contract.
<b>Rights and Obligations of the Contractor for EPC and Turnkey Contract</b>		
Article 32 & 34 Rights and Obligations of the Contractor (EPC & Turnkey Contract)	Clause 2.1, 3.3 Right of Access to the Site, Instruction of the Engineer	♦ In Decree 37, the Contractor has rights to refuse the works if the works are beyond the contract, whereas in FIDIC the Contractor shall comply with the instructions by the Engineer.
<b>Adjusting Contract (Variations)</b>		
Article 35, 36 & 37 Adjustments to Construction Contract, Principles for Adjusting Construction Contract, Adjustments in Quantity of Work to Construction Contract (ref CL Article 143)	Clause 13.1 Right to Vary	♦ In FIDIC, extents of variations are much wider, like changes to the quality and characteristics, changes to the levels etc., omission, changes to the sequence or timing and so on.
<b>Price Adjustments</b>		
Article 38 Adjustments in Unit Price and Contractual Price	Clause 13.1, 13.8 Right to Vary, Adjustments for Changes in Cost	♦ In Decree 37, only when quantities are increased or decreased more than 20 %, unit prices shall be adjusted, whereas in FIDIC no such conditions.
<b>Claim, Disputes and Settlement</b>		
Article 44, 45 Complains during Contract Performance, Dispute Settlement (ref CL Article 146 & 147)	Clause 2.5, 20 Employer's Claim, Claims, Disputes and Arbitration	♦ In Decree 37, when either party detects the other party malfunctions or fails to perform obligations, the party shall lodge, whereas in FIDIC when either party considers himself to be entitled, the party shall give notice for claim.

Decree 37	FIDIC	Difference
<b>Insurance and Warranty</b>		
Article 46 Insurance and Warranty (ref CL Article 9 & 125)	Clause 11.4, 14.9, 18 Failure to remedy Defects, Payment of Retention Money, Insurance	<ul style="list-style-type: none"> <li>♦ In Degree 37, professional liability insurance shall be effected for the survey and design works in Grade II and above, whereas none in FIDIC.</li> <li>♦ In Decree 37, maintenance guarantee is specified during maintenance period for repair, whereas in FIDIC, guarantee for second half of retention money is specified for same purpose.</li> </ul>

Source: Project team

It is to note that contract implementation model, variations and claims are most different items in Viet Nam contract and FIDIC contract at this stage. Therefore, these shall be reviewed and discussed in CPMU for next step.

It is also to note that Clause 3 of Article 54 in Decree 37 stipulates that use of model FIDIC conditions of contract is encouraged.

(5) Findings from Case Study Projects of State Budget and JICA Loan

There were four case study projects of state budget / public budget and as the Construction Project of Head Office of Cau Giay People's Court and the Construction Project of Ha Long – Hai Phong Expressway use similar contract documents, the former was taken for precise review. Since Lai Chau Hydropower Plant Project adopts FIDIC Conditions, it was reviewed separately. Song Hau Thermal Power Plant Project adopts the Engineering, Procurement and Construction Contract. It utilizes FIDIC Conditions and is different one from the conditions in Lai Chau Project.

There were two case study projects of JICA loan and they use JICA standard bidding documents, including FIDIC Conditions.

1) Construction Project of Head Office of Cau Giay People's Court

- ♦ Documents reviewed
  - Contract of Construction between PO (Hanoi People's Court) and Contractor (Tropical Architectural Construction JSC) (Translated English version)
  - Contract of Supervision Consultant (SVC) between PO (Hanoi People's Court) and Consultant (Viet Nam City Consultant JSC- Vinacity) (Translated English version)
- ♦ Findings from discussion on site and documents reviewed
  - Contract with Contractor and Consultant is compiled based on Circular 9/2011/TT-BXD Guiding Contract Form of Construction Works and on Circular 8/2011/TT-BXD Guiding Contract Form of Some Consultancy Works in June 2011 respectively.
  - Minutes at contract negotiations in construction and consultant are within contract dossier. The minutes at the contract negotiation shall be checked carefully, as there might be some alterations on concept of contract in Circular 8 or 9/2011/TT-BXD.
  - There is no definition of Project Management Unit (PMU): Although contract is between Project Owner and Contractor, PMU manages the project on behalf of Project Owner. It is very important to define the responsibilities and authorities of PMU and inform them to stakeholders (SVC and Contractor).
  - Demarcation between PMU and SVC is not clear enough.

2) Lai Chau Hydropower Plant Project (LCHP)

- ♦ Documents reviewed
  - Contract Agreement (Translated English version)

- Special Conditions of Contract (SCC, Translated English version)
  - General Conditions of Contract (GCC, Vietnamese version)
  - ♦ Findings from discussion in main office and on site, and documents reviewed
    - FIDIC contract is base for Lai Chau Hydropower Plant Project. Use of FIDIC contract is model practice in Viet Nam, adopting international standard in contract management
    - Roles of the Employer and the Engineer in the Contract are implemented by PMU.
    - General Provision in Article 7 of the Contract Agreement includes “In parallel with Articles in this Contract, during contract performance, parties must comply with Viet Nam law of all issues that are not mentioned in the Contract”, which is very advanced stipulation and clear statement describing relation between the contract and Vietnamese regulations. This would be contributed to avoid confusions.
    - Regulations in regard to construction quality in Viet Nam (Decree 209/2004/ND-CP & Decree 15/2013/ND-CP etc.) are directly incorporated in Article 1.8.2 (Documents, drawings provided by the Contractor), 3.3 (Instructions of the Engineer), 6.8 (Contractor’s Superintendence), 7.3 (Inspection) and 10.1 (Taking Over of the Works and Sections) in Special Conditions of Contract.
    - Some words in GCC are revised like first paragraph of Clause 4.21 Progress Report that original statement is “... submitted to the Engineer...” while GCC is “... submitted to the Employer...”.
    - As reference, JICA Notes on Conditions of Contract and Contract Forms in PART 3 in the Standard Bidding Documents under Japanese ODA Loan stipulate that GC shall be used without modification as per virtue of a license agreement and Notes on Particular Conditions in the same documents stipulate that Part B, the Specific Provisions of the PC shall be used without modification.
  - ♦ Further Discussions
    - In Viet Nam, PO can decide which kind of contract conditions will be used. LCHP did decide to use FIDIC conditions in modification with Viet Nam’s regulations. Thus, the roles of some stakeholders in LCHP are somehow different from FIDIC conditions.
    - In 2010 when prepared Decree 48 – the first decree on contract management, MOC tried to apply FIDIC conditions to Viet Nam but the ideas were opposed by some organizations.
    - In addition, it is true that regulations in Viet Nam often overlap.
    - In Viet Nam there are many regulations stipulating quality management, safety management, etc. Those regulations also stipulate responsibility sharing among stakeholders (PO, PMU, supervision consultant (SVC) and contractors, etc.). Thus, the Project team proposes improvement of such situation.
- 3) Song Hau Thermal Power Plant Project (SHTP)
- ♦ Documents reviewed
    - Organization Chart of Project Management Board
    - Conditions of Contract between PO and the Contractor (Vietnamese version)
  - ♦ Findings from discussion in office and site, and documents reviewed
    - The Project is categorized in the Engineering, Procurement and Construction (EPC) Contract.
    - The Conditions of Contract for SHTP is taken mainly from FIDIC Conditions of Contract for EPC/Turnkey Projects with some modifications.
    - The Employer is Petro Viet Nam and the Employer’s Representative stipulated in Clause 3.1 of the Conditions of Contract is confirmed the Head (Director General) of Project Management Board.
    - In regard to underground conditions, SHTP has unique stipulation in the Conditions of Contract and the brief explanation is shown below.



- a) EPC contract includes engineering (design) for the contractor duty, which means EPC contractor is more responsible to recognize underground conditions and foundation design than the contractor implementing construction designed by the employer. Therefore, EPC contractor shall have heavier responsibility in this regard.
- b) In FIDIC Conditions of Contract for EPC/Turnkey Projects, there is no provision for unforeseeable physical conditions and there is only provision for unforeseeable difficulties instead. Then it stipulates that risks on unforeseeable conditions shall be carried by EPC contractor.
- c) The Conditions of Contract for SHTP include two sub clauses for unforeseeable conditions (one is similar to FIDIC for EPC/Contract and the other is similar to FIDIC for Construction Contract designed by the employer). Former stipulation is applied to part of lump sum contract and latter is applied to part of adjustable unit price contract with re-measurement.
- d) As underground conditions are not able to foresee fully during design stage, the Conditions of Contract for SHTP is unique that unknown risks in underground conditions are shared by both parties at the time of contract and resolved when everything is made known.

♦ Further Discussion and Recommendation for EPC Contract

- Generally EPC contract is lump sum.
- Underground conditions could not be fully captured in design stage and full extents are known during construction.
- Work items in foundation are made to adjustable unit price with re-measurement together with stipulation for unforeseeable physical conditions taken from FIDIC Conditions of Contract for Construction Contract designed by the employer, so that foundation depth and/or pile length may be adjusted during construction. In other words, the Condition of Contract for SHTP could be good model for EPC Contract and recommended to incorporate concept into future regulations in Viet Nam.

4) Projects of JICA loan

The projects use JICA standard bidding documents, including FIDIC Conditions of Contract and contract management was implemented as usual. However, the employer (project owner (PO) / project management unit (PMU)) sometimes insisted to follow Vietnamese regulations.

(6) Problems on Contract Management in Construction Contractor Works

Referring the discussions in CPMU meetings by 2016 including reviews of related regulations in Viet Nam, lessons learned from the case study projects, the comments collected from construction industries in Viet Nam (details in Chapter 11) and other information including those from JICA Viet Nam Office, problems on contract management in construction contractor works are summarized with some categories and number of problems are listed below (details are included in GLCM).

These problems are taken into account when compiling the guideline of contract management.

**Table 10-5 Number of Problems on Contract Management**

Categories	Number of Problems Identified
1. Roles of parties	8
2. Language to use	2
3. Site possession	2
4. Variations	3
5. Time extension	2
6. Cost and payment	10

Categories	Number of Problems Identified
7. Agreement and decision	3
8. Claim and dispute	3
9. Defect liability	7
10. Insurance	2
11. Others	7

Source: Project team

### 10.2.2 Items of Differences and Gaps between FIDIC Contract and Vietnamese Contract

As stated aforesaid in Section 10.2.1 and referring FIDIC Conditions in particular, differences and gaps between FIDIC contract and Vietnamese contract are compiled with some categories and number of differences and gaps are listed below (details are included in GLCM).

These differences and gaps are taken into account when compiling the guideline of contract management.

**Table 10-6 Number of Differences and Gaps between FIDIC and Vietnamese Contract**

Categories	Number of Differences and Gaps Identified
1. Roles of parties	4
2. Language to use	1
3. Site possession	-
4. Variations	1
5. Time extension	1
6. Cost and payment	3
7. Agreement and decision	1
8. Claim and dispute	3
9. Defect liability	1
10. Insurance	1
11. Others	-

Source: Project team

### 10.2.3 Identification of Problems on Warranty Period and Insurance

To identify problems on warranty period and insurance in Viet Nam, CPMU meetings were held and active and fruitful discussions were carried out.

#### (1) Problems on Warranty Period (defect liability period)

Problems and comments raised by concerned parties are summarized in table below.

Ideas to overcome the problems raised by C/Ps (SACQI and then CED) were also discussed at CPMU meetings.

**Table 10-7 Problems and Comments on Warranty Period**

Organization	Problems and Comments
SACQI	<ul style="list-style-type: none"> <li>- In Viet Nam, one project/construction work is often divided into different packages leading to difficulties in defining warranty period for each package by each contractor. When construction structure is in use, defects might be found and by the time warranty period for earlier packages is over.</li> <li>- In case package 1 (for substructure, for example) was completed by Contractor 1 already and package 2 (for superstructure, for example) is being implemented by Contractor 2. And during the implementation period of package 2, damage was caused to package 1's product (substructure). In this case, how to define the responsibility for damage repair for Contractor 1, Contractor 2 and even PO (who is in charge of coordinating the implementation by two Contractors)?</li> </ul>

Organization	Problems and Comments
	<ul style="list-style-type: none"> <li>- Regulation in Viet Nam specifies minimum duration for warranty period to construction projects in circular, depending on Grade of project. Reasonable period for warranty needs to be determined. Process and consideration on determination of duration is required.</li> <li>- Defects are sometimes found after warranty period, and ideas to overcome such situation are required.</li> </ul>
CED	<ul style="list-style-type: none"> <li>- The difference in interpreting and understanding of guarantee and liability of contractors.</li> <li>- In Viet Nam, after guarantee period, contractors often run away and have no more responsibility.</li> <li>- In Viet Nam, there are several independent contractors for one project, so there may be different guarantee period for different constructors.</li> <li>- Process and consideration on extension of warranty period is required.</li> </ul>
Overseas Construction Association of Japan Incorporation (OCAJI)	<ul style="list-style-type: none"> <li>- Cost of defect liability</li> <li>- Compulsory legal regulations on defect liability to the works should be taken place.</li> <li>- The intention of defect liability period is often misunderstood in that the Contractor is expected to carry out routine maintenance and repairs during the defect liability period.</li> <li>- After handover of the project, when the responsibility for routine maintenance is not carried out directly by the original employer, this situation may generate additional requests for the Contractor to attend to or rectify matters that are not actually his responsibility under the contract.</li> </ul>
JICA Expert	<ul style="list-style-type: none"> <li>- The most common issue on defect liability is identification of the reason of defect. Defects generally appear with three causes, 1) improper manner in construction, 2) inappropriate design and 3) improper usage (overload etc.), and it is difficult to identify the causes 1) or 2) or 3), as defects often result from combined causes.</li> <li>- In Viet Nam, responsibility and process of the judgement of defect is not clear.</li> </ul>

Source: Project team

The issues on warranty / defect liability can be summarized in the following points.

- Understanding of the responsibility of contractors during warranty / defect liability period
- Determination of appropriate duration of warranty / defect liability period
- Warranty security during warranty / defect liability period
- Judgement of defect and settlement
- Responsibility of contractors after warranty / defect liability period

These problems and issues on warranty / defect liability period identified through the discussion mainly with C/Ps are to be included in the guideline on contract management.

## (2) Problems on Insurance

Law on construction/2014/QH13 and Decree 37/2015/ND-CP stipulate insurances in construction works, and each type of insurances in construction works are sorted out at first whether these are compulsory or optional and who would purchase.

**Table 10-8 Types of Insurance in Construction Projects in Viet Nam**

No.	Type of Insurance	Law on Construction	Decree 37 – Contract Management
1	Insurance for the Works during construction term	Article 9.2 a) The employer is required to buy Insurance for the Works which are prone to affect public safety, environment and for the Works with specific technical requirements or with complicated construction conditions;	Article 46. 1 a) The employer shall buy insurance for the works during the construction period. In case, insurance premium is included in contract price, the contractor shall buy this Insurance for the Works.

No.	Type of Insurance	Law on Construction	Decree 37 – Contract Management
2	Professional liability insurance of construction investment consultants	Article 9.2 b) The consultant is required to buy Professional liability insurance for survey works and design works for the Works of grade II and above.	Article 46. 1 b) The consultant shall buy professional liability insurance for the tasks of construction survey, construction design of construction works from Grade II and over.
3	Insurance for materials, construction vehicles and equipment, labor	Article 9.2 c) The contractor is required to buy insurance for labor at construction site. (Notes: Those for materials, construction vehicles and equipment are not required.)	Article 46. 1 c) The contractor shall buy necessary insurances (insurance for labors at site, <u>insurance for equipment, insurance for third party</u> , etc.) for insuring the contractor’s activities.
4	Civil-liability insurance for 3 <sup>rd</sup> party	Article 9.3 The employer, the consultant, and the contractor are encouraged to procure types of insurance in construction activities, except for cases stipulated in clause 2 of this article.	
5	Warranty insurance		Article 46. 2 a) The contractor shall be responsible for carrying out warranty to the works and equipment as agreed in the contract. Agreements by the two parties on period of warranty, level of warranty guarantee must accord with the law on construction. b) Warranty guarantee can be made in the form of guarantee or other forms as agreed by the two parties but form of guarantee is preferred.
<p>Exclusion clause: Insurers are not responsible for compensating following losses:</p> <ul style="list-style-type: none"> <li>- Losses caused by intentional acts;</li> <li>- Consequential losses;</li> <li>- Losses that are not quantifiable into monetary amount;</li> <li>- Catastrophe losses;</li> <li>- Losses caused in case insuring parties have no insurable interests.</li> </ul>			

Source: Law on Construction, Decree 37

Then, Decree 119/2015/ND-CP (compulsory insurance for construction investment activities) issued in 2015 by Ministry of Finance stipulates the details of compulsory insurances such as insuring party, period of insurance and minimum insurance coverage.

Problems and comments raised by concerned parties are summarized in table below.

**Table 10-9 Problems and Comments on Insurance**

Organization	Problems and Comments
SACQI	<ul style="list-style-type: none"> <li>- Regarding the professional indemnity insurance, maximum amount of compensation to be paid by Consultant to Client is limited to the contract amount. But for Designing Consultant, the contract price is quite small and defects due to their faults may result in serious damage and cost the Client a lot of money, even more than the contract price. So how to deal with this matter?</li> <li>- Warranty insurance after defect liability</li> </ul>
CED	<ul style="list-style-type: none"> <li>- Coverage of insurance for the works is not clear, for example, whether the material on the site before acceptance by employer is covered by insurance or not.</li> <li>- Ideas to procure necessary insurances without any omission.</li> <li>- Regarding the professional liability insurance, more information such as type of insurance, advantages and disadvantages of each type, situation in other countries are required.</li> <li>- The information regarding premium of insurance for the work and professional liability insurance is required to determine appropriate cost estimation.</li> </ul>

Organization	Problems and Comments
OCAJI	<ul style="list-style-type: none"> <li>- In the contract specification, it is not clearly mentioned about Insurance Condition even this is work scope of the Employer.</li> <li>- Risks in scope of owners and contractors shall be clarified clearly.</li> <li>- It is better if the condition for temporary work insurance is clearer.</li> </ul>
JICA expert	<ul style="list-style-type: none"> <li>- The regulations between Law on Construction and Decree 37 are inconsistent in some points. In actual situation, construction contractors do not tend to purchase insurances to save money.</li> <li>- The regulation regarding compulsory insurance for construction work has been stipulated recently and insurances regarding construction works are still unfamiliar for Viet Nam. It is necessary for concerned parties to develop a understanding regarding insurances and acquire practical experinces.</li> </ul>

Source: Project team

These problems and issues on insurance identified through the discussion mainly with C/Ps are to be included in the guideline on contract management.

#### **10.2.4 Formulation of Guideline on Contract Management and Contract Alteration**

Following the identification of problems on contract management, warranty period and insurance, and referring the differences and gaps between FIDIC contract and Vietnamese contract stated in the aforesaid sections, the Project team (C/Ps and experts) developed the guideline on contract management and contract alteration (GLCM) with the basic objectives below.

- (1) To help drafter of tender / contract documents to check the necessary items and contents when tender / contract documents are prepared;
- (2) To help the employers (PO, PMU, PMB: Project Management Board) to review the tender / contract documents prior to call for tender / sign for contract and to check and confirm necessary actions for contract management and alteration during implementation of construction project, including defect liability period;
- (3) To help the consultants (PMC or SVC) to check and confirm necessary actions for contract management and alteration during implementation of construction project, including defect liability period; and,
- (4) To help the contractors to review the tender / contract documents prior to submit tender / sign for contract and to check and confirm necessary actions for contract management and alteration during implementation of construction project, including defect liability period.

Draft GLCM was prepared and submitted to CPMU meeting in December 2016 and since then, the contents of GLCM were discussed and revised, and eventually agreed in CPMU meeting in February 2017.

After basic agreement in CPMU, the draft GLCM was presented in the second dialogue with the construction industries in Viet Nam (Vietnam Association of Construction Contractors: VACC, Vietnam Engineering Construction Association: VECAS and Overseas Construction Association of Japan Incorporation: OCAJI) and the contents of GLCM were discussed with them and comments were received from them in March 2017. Subsequently, the draft GLCM was presented in PCU meeting in the same month. After reviewing all comments, GLCM was compiled again and submitted to MOC in March 2017 with the covering letter. GLCM was then presented in the Fourth Joint Steering Committee (JSC) meeting in April 2017.

In July 2017, C/Ps requested to have real requirements that the representatives for contract management need to have. Then the JICA expert collected related information and requirements (including legal qualification for contract management in developed countries) and discussed in CPMU meeting in August 2017. Eventually new chapter (Chapter 6) was decided to insert for this subject.

Contents of the guideline are finally shown below.

**Table 10-10 Contents of Guideline on Contract Management and Contract Alteration**

Chapter	Title & Contents	Remarks
	Preface Explanation of Guideline	
Chapter 1	Background and Procedure of Guideline Formulation 1.1 Background 1.2 Procedure of Guideline Formulation	
Chapter 2	Improvement on Critical Issues 2.1 Six Approaches (Tender and Contract Documents / Instruction and Determination / Evaluation process on Variation & Extension of Time / Standardization on Stage Payment Process / Procedure of Acceptance Inspection / Judgement on Defects)	for advance of Viet Nam contract management to international level
Chapter 3	Contract Formation 3.1 Contract Model	
Chapter 4	Contract Management 4.1 Time of Tender: (1) to (2) 4.2 Time of Contract Sign: (3) to (8) 4.3 Time of Commencement: (9) to (14) 4.4 Time of Construction: (15) to (31) 4.5 Time of Completion: (32) to (34) 4.6 Defect Liability Period: (35) to (37)	two items six items six items seventeen items three items three items
Chapter 5	Contract Alteration	
Chapter 6	Representatives for Contract Management	
Appendix I	Requirements of Representatives for Contract Management	Refer FIDIC, ICE of UK, NSPE of USA & JSCE of Japan
Appendix II	Duties and Responsibilities of PO_PMU / PMB /PMC /SVC in Construction Works	

Note ICE of UK: Institutes of Civil Engineers in United Kingdom  
NSPE of USA: the National Society of Professional Engineers in United States of America  
JSCE of Japan: Japan Society of Civil Engineers

Source: Project team

Chapter 1 stipulates background of present situation in contract management in Viet Nam and procedure of guideline formulation by summarizing problems and issues on contract management in Viet Nam and gaps & differences between Vietnamese Contract and FIDIC Conditions of Contract.

Chapter 2 proposes improvement on critical issues observed in Vietnamese contract as a whole. The six approaches are explained and recommended to incorporate into construction contract in Viet Nam in order to advance contract management to international level.

Chapter 3 explains contract models adopted in Viet Nam and FIDIC model, and compares them. Thereafter, gaps and differences in current practice are shown and ideas for improvement on current contract models in Viet Nam are proposed.

Chapter 4 explains details of contract management in each stage of construction works for the stakeholders showing current practice and gaps & differences, and then recommendations for improvement are provided.

Chapter 5 explains current rules in Viet Nam in regard to contract alteration, which may be read in conjunction with certain items in Section 4.4. Some improvements are stipulated as well.

Chapter 6 explains current legal qualifications and requirements for project manager (the employer) and site commander (the contractor) in Viet Nam, practice in this regard in Japan and Singapore and then recommendation for improvement in Viet Nam.

Structure in Chapter 3 to 5 is the same and shown below.

- 1) Current Regulation and Practice in Viet Nam
- 2) Gaps and Differences on Current Practice in Viet Nam
- 3) Improvement in Short Term and Long Term, where former (Improvement in Short Term)

means improvement is able to do when there is intention for improvement under current regulations and latter (Improvement in Long Term) needs some revisions of current regulations.

- 4) References mainly taken from relevant clauses in FIDIC Conditions of Contract

In addition, two appendixes are provided as follows.

Appendix 1 is Requirements of Representatives for Contract Management. The requirements particularly in public works are itemized in fairness, competency and priority to public and society interest by referring FIDIC Conditions of Contract as well as Code of Professional Conduct of Institute of Civil Engineers in United Kingdoms and similar kinds in other developed countries.

Appendix 2 is Duties and Responsibilities of the Employer Side compiled in each stage.

As new chapter was added in GLCM as aforesaid, the revised GLCM was submitted in December 2017 with the covering letter.

Since the guideline refers the current regulations in Viet Nam and contract management is upgraded time to time, the guideline shall be reviewed periodically. It is also true that this kind of documents shall be updated time to time in order to incorporate advance technologies and solutions.

### 10.2.5 Training Workshops

- (1) First Training Workshops in 2016

First training workshops were arranged in the year 2016 for staff in state authorities including MOC other than C/Ps, staff in related organizations for construction projects such as POs/PMUs, staff in Vietnamese construction industry and other entities. The details of training workshops such as date, venue, participants, program etc., are described in Chapter 11.

The outline of GLCM such as objectives, formulation procedures, contents, important points of each chapter and some selected topics was briefly presented and explained by JICA expert. On the other hand, C/Ps explained major changes in newly issued decree on contracts in construction activities. After presentation, question and answer sessions were carried out. Major questions from participants and answers of experts and C/Ps regarding contract management are summarized in the table below.

**Table 10-11 Summary of Q&A on Output 5 in First Training Workshops**

Questions from Participants		Answers of Experts and C/P
1	GLCM recommended that negotiation after closing of the bid should not be conducted. However, how can we handle the situation when the advance payment is changed from 10% to 20% due to reduction of bid price or the reduction of contract performance time?	In ODA projects, contract negotiation is not allowed because if advance payment becomes 20%, the 2 <sup>nd</sup> lowest bidder may lower their price, which is not fair to all bidders. That is the reason the guideline of contract management recommends that tender documents have to be fully prepared at the time of tender.
2	Can we adjust quantity and price of lump sum projects?	Basically, quantity and price shall not be revised. In case scope and design are changed, quantity and price shall be revised accordingly.
3	Please give more clarification for the case that the construction progress is prolonged not because of contractor side.	In case the construction progress is prolonged not because of contractor, the contractor should calculate and add cost to the contract. In case the delay of the construction is due to the contractor side, they have to be responsible for that.

Source: Project team

- (2) Second Training Workshops in 2017

Second training workshops were arranged in June 2017 again for similar staff mentioned in (1)

first workshops the above. The details of the second training workshops such as date, venue, participants, program etc., are also described in Chapter 11.

The outline of GLCM including additional details to the presentation in the previous workshops was presented and explained by JICA expert. On the other hand, C/Ps explained EPC contract (Circular 30 / 2016 / TT-BXD) newly issued. After presentation, question and answer sessions were carried out. Major questions from participants and answers of experts and C/Ps regarding contract management are summarized in table below.

**Table 10-12 Summary of Q&A on Output 5 in Second Training Workshops**

Questions from Participants		Answers of Experts and C/P
1	I understand that consultants in construction projects under the regulation of Viet Nam shall act within authority and obligations specified in the contract with PO and the Engineer in FIDIC Contract shall be the same in principle. In Long Term Improvement of the slide 14 of the presentation, it is recommended that the Engineer shall behave as if third party independent from PO or PO/PMU. I consider the above seems contradiction.	Roles and responsibilities of the consultants (PMC or SVC) under the regulation of Viet Nam and the Engineer in FIDIC Contract are different. Your understanding on roles and responsibilities of the former (PMC or SVC) is correct and those of the latter (the Engineer in FIDIC Contract) are much wider. In addition, roles and responsibilities of the Engineer are specified clearly in FIDIC Contract and therefore the contract between PO and the consultant (the Engineer) shall be prepared within the roles and responsibilities of the Engineer in FIDIC Contract.
2	In regard of slide 8, item g in EPC Contract: Agreement with contractor on bidding documents of engineering procurement in compliance with the signed EPC contract: I think after signing the contract, it is very troublesome and difficult for stakeholders to make agreement again.	We agree with you that this sentence is not clear enough. Later we will revise this sentence. We recommend you to comply with the contract condition, which states whether the agreement can be made or not.
3	The Circular 10 of the MPI requests to apply contract in the bidding document and recommend using FIDIC conditions while the Circular 30 of the MOC requests to apply EPC contract. What contract should we apply? Can you clarify this issue?	The instruction for application of contract is stated in Circular 30 in which what type of contract to be applied is optional, provided that the contract form is in compliance with Vietnam regulation on construction.
4	Price of EPC contract is lump sum but the cost estimation is available only when contractor make design. In this case, what should we do when the contract price is different with cost estimation?	For EPC contract, contractors will only implement the works basing on the design enclosed to the contract, which is basic design. Our Circular stipulates to appraise the basic design, the appraisal of cost estimation is not compulsory. The cost estimation in the bidding document, if any, will be used for reference during implementation to eliminate tasks which are not implemented to save cost. And it does not affect to the payment price.
5	For some big EPCs, foreign contractors are hired that foreign standards will be applied for the construction works. How to deal with this?	Standards to be applied in the project should be clearly clarified in the contract. The Vietnam regulation now allows contractors to use foreign standards. However, we should clarify these foreign standards will be applied for which types of projects.
6	How to deal with case in which currency in proposal is VN Dong but when paying, the contractor request for payment in foreign currency?	There should be approval of the investor and no objection from the donor for the change of currency.

Source: Project team

As the contract management is not disseminated sufficiently in Viet Nam and the time for presentation was limited, only important topics regarding contract management and alteration were introduced and it might be a little difficult to understand especially for those who don't know FIDIC contract at all. More detailed explanation of GLCM is scheduled to be conducted in future training courses by MOC in 2018 onward as explained in Section 10.2.6.



### 10.2.6 Compilation of Training Program and Materials

Since GLCM consists of the current regulations on contract management in construction works in Viet Nam, the Conditions of Contract formulated by the International Federation of Consulting Engineers (FIDIC) and the recommended improvements based on the knowledge and the experiences in contract management, there needs to have proper training programs for dissemination.

In order to make continuity of trainings in regard to contract management, the Project Design Matrix (PDM) includes activity for compilation of training program and materials on GLCM, which helps MOC to take initiative for trainings after CCQS Project is complete.

Since MOC has the Academy of Managers for Construction and Cities (AMC) who provides number of training courses in construction projects, the trainings for GLCM after the CCQS Project shall be taken care by AMC together with relevant organizations in MOC for sustainability of enhancement of staff capacity in MOC and other stakeholders.

The Project team compiles the training program and materials for GLCM with the following contents.

**Table 10-13 Contents of Training Program and Materials  
for Guideline on Contract Management and Contract Alteration**

Section	Title & Contents	Remarks
	Preface	
Section 1	Necessity of Training	
Section 2	Training Programs	Three kinds of courses
Section 3	Trainers in Training Courses	
Section 4	Location of Training Courses	Five cities nominated
Section 5	Training Materials	GLCM & current regulations
Section 6	Evaluation and Feedback after Training	
Section 7	Others	
Appendix 1	Presentation Files of GLCM (power point)	67 slides
Appendix 2	Case Study Papers	13 papers in 11 items
Appendix 3	Adult Learning Concept	

Source: Project team

Section 1 explains necessity of trainings in general and addresses to the trainings for GLCM.

Section 2 explains three training courses, such as compact course with five hours, full course with twenty hours and special course for each item with four to eight hours. Since GLCM quite often refers FIDIC Conditions of Contract, training courses regularly implemented by VECAS (official member of FIDIC) are briefed as supplemental course.

Section 3 explains trainers for training courses, who are mainly staff in SACE and Institute of Construction Economic in MOC. Staff of AMC will be assigned after having training courses in Section 2.

Section 4 shows locations of training courses, which are Hanoi, Ho Chi Minh City, Da Nang, Can Tho and Vinh City, where the training workshops in CCQS Project were held except Vinh City.

Section 5 summarizes training materials, such as GLCM itself, the presentation files for GLCM prepared for the training workshops and added further in Appendix 1, the papers for case studies in Appendix 2 and the current regulations (Construction Law/2014/QH13, Decree 37/2015/ND-CP, Circular 9/2016/TT-BXD etc.).

Section 6 explains “Evaluation and Feedback after Training” as post actions for improvement of the training courses.

Section 7 shows concept of adult learning written by Mr. Stephen Lieb.

There are three appendixes as follows;

- Appendix 1 Presentation of GLCM
- Appendix 2 Case Study Papers
- Appendix 3 Adult Learning Concept

The draft Training Program and Materials for GLCM was discussed in CPMU meetings and after reviewing the comments from C/Ps, the document was finalized and agreed in CPMU meeting. The Training Program and Materials for GLCM was submitted to MOC in December 2017 with the covering letter.

### **10.3 Recommendations and Lessons Learned**

As having worked in CCQS Project as the Project team since April 2015 for three years and all activities in the PDM for Output 5 were complete, the followings are the achievements in Output 5.

- ♦ C/Ps in MOC come to understand contract management in construction works at certain level.
- ♦ The Guideline on Contract Management and Contract Alteration of Construction Contractor Works (GLCM) was compiled in joint efforts of C/Ps and JICA team based on the activities of Output 5 (5-1 to 5-3 in PDM) and submitted with the covering letter.
- ♦ Training workshops were held in November and December 2016 at Hanoi, Da Nang and Ho Chi Minh City and in June 2017 at Hanoi, Ho Chi Ming City and Can Tho, in which GLCM and related regulations (Decree 37/2015/ND-CP, Circular 7 & 9/2016/TT-BXD and Circular 30/2016/TT-BXD) were presented for disseminations. After presentation, question and answer sessions were done quite actively between the participants and the Project team.
- ♦ Training Program and Materials on GLCM was compiled and submitted with the covering letter. MOC starts to make plan of trainings on output documents for further dissemination, including GLCM.
- ♦ State Authority for Construction Economics (SACE) of MOC has clear intentions to incorporate essence of GLCM into regulations.

In addition, the followings are issues experienced in the activities of Output 5.

- ♦ Discussions were carried out only within C/Ps (SACE and SACQI) and JICA team of Output 5, though the results of Output 5 were presented in PCU and JSC meetings and some discussions with construction industries in Viet Nam and in the training workshops were taken place.
- ♦ Though Decree 48/2010/ND-CP and Decree 37/2015/ND-CP stipulated that FIDIC contract is encouraged to apply, dissemination of FIDIC was not extended sufficiently. This is because current regulations in contract in Viet Nam are different from FIDIC contract and stakeholders are not interested to apply FIDIC.
- ♦ Contents of Output 5 were explained to a few PMUs only undertaking ODA projects and/or using FIDIC contract in case studies.
- ♦ MOC regulates construction industry through establishment of laws, decrees and circulars, however rarely manages construction work itself as project owner. Therefore, the effect of Output 5 does not directly extend to PMUs controlled and supervised by other ministries and organizations and also to contractors.

With the above achievement and issues, the following actions are expected and recommended to implement by SACE of MOC with related organizations.

- ♦ MOC (AMC and SACE) will implement trainings on output documents (GLCM etc.) in the year 2018 onward for dissemination.
- ♦ When revising regulations incorporating the contents of GLCM, MOC recognizes that training program and materials shall be modified and upgraded so that purposes of trainings will be not

only dissemination but also application of new regulations.

- ♦ MOC will legalize the short term improvements in GLCM at decree and circular level by the year 2018.
- ♦ MOC will integrate the long term improvements in GLCM to proposal for adjustment and amendment of the Law on Construction by the year 2020.
- ♦ MOC will formulate general conditions of contract for domestic projects by referring GLCM in order to fill the gaps of contract management between the domestic projects and the project under official development assistance.

The roadmap for achievement in CCQS Project and future actions was prepared by the Project team (C/Ps and JICA team). The roadmap for future plan was presented by C/Ps and accepted in the Fifth JSC meeting in October 2017. It was explained again by C/Ps and re-confirmed in the Special meeting for explanation of draft Project Completion Report (PCR) in January 2018.

The roadmap for Output 5 is shown in the table below.

**Table 10-14 Roadmap for Output 5 in CCQS Project and Future Plan**

Items	2015	2016	2017	2018	2019	2020	2021	2022
<b>Output 5 in CCQS Project</b>								
1 Compilation of Guideline for Contract Management and Alteration (GLCM)								
2 Submission of Guideline for Contract Management and Alteration (GLCM)								
3 Training Workshop								
<b>MOC Plan to disseminate &amp; incorporate GLCM into Regulation</b>								
1 Trainings for Dissemination of GLCM								
2 Short Term Improvements : Integration to Legal Documents at Decree (37) and Circular (7 to 9)								
3 Long Term Improvement Proposal for Adjustment and Amendment of the Law on Construction								
4 Formulation of Standard Conditions of Contract								

Source: Project team

Lessons learned from the experiences in CCQS Project are stated below for future similar projects.

- ♦ At the commencement, interested parties will be searched and discussions be carried out with them in regular basis, including those having experiences on FIDIC contract.
- ♦ Seminars and/or workshops for FIDIC contract will be promoted together with the trainings for output documents of contract management in the project.

The GLCM formulated in Output 5 enhanced C/Ps capacity in contract management in construction works.

In case that the GLCM is used to be the guidance for implementing contract management by state authorities and POs / PMUs, and the contractors under the contract, the Project team considers that the contract management at construction site in Viet Nam will be improved.

Subsequently, contract management of infrastructure projects in Viet Nam will approach to the international level.



## Chapter 11 Dialogues and Trainings

### 11.1 Outline of Dialogues and Trainings

In parallel to capacity enhancement for counterparts (State Authority for Construction Economics: SACE, State Authority of Construction Quality Inspection: SACQI, Construction Activity Management Authority: CAMA and Academy of Managers for Construction and Cities: AMC) in the Ministry of Construction (MOC), the Project outputs have to be disseminated over whole MOC and other stakeholders in construction field in Viet Nam. Dissemination of the Project outputs is made through dialogues with Vietnamese construction industry and training workshops in accordance with progress of formulations of the guidelines, methods and mechanism etc.

In the context, dialogues are exchanges of views on the Project outputs and training workshops are for capacity enhancement to staff and related organizations of MOC directly involved in construction projects as well as for dissemination of wider range of stakeholders in construction field in Viet Nam.

In view of efficiency and wide dissemination of the Project outputs, the followings are base consideration in each one.

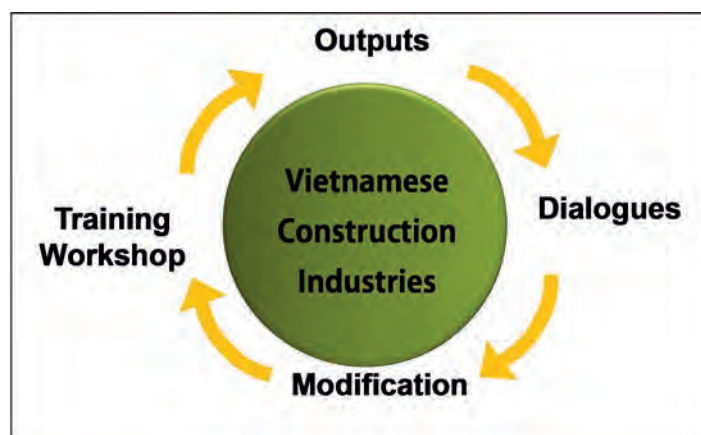
#### (1) Dialogues with Construction Industry

Vietnamese construction industries are Vietnam Association of Construction Contractors (VACC), Vietnam Engineering Consultant Association (VECAS) and Overseas Construction Association of Japan in Vietnam (OCAJI). Basically general explanation of the Project is arranged at commencement of the Project. When drafts of outputs are ready, those in each output are presented and comments are collected from them. These dialogues are made for several outputs together.

#### (2) Training Workshops

As training workshop participants in Output 1 to 5 are generally in common, combined training workshops are arranged. As outputs (guidelines etc.) are reviewed and revised as necessary, training workshops are intended to hold in second and third year of the Project at several locations (anticipated at Ha Noi, Ho Chi Minh, Da Nang and Can Tho). After the training workshops, questionnaires are delivered to the participants and answers are collected from them on the subjects (outputs of the Project).

The image of dialogues with construction industries and training workshops is shown in Figure 11-1.



Source: Project team

**Figure 11-1 Image of Dialogues and Training Workshops**

(3) Presentation of Each Output Documents in Project Coordination Unit (PCU) Meetings

Presentations for output documents are arranged in PCU meetings time to time to have discussions and collect comments from member of PCU.

(4) AMC Roles

For arrangement of training workshops, AMC is consulted for future sustainability together with Chief advisor and JICA Viet Nam Office.

AMC implemented the 274 training courses, 38 training programs and 17,523 trainees in 2016. The training programs of AMC are shown in the list below.

Training courses for meeting operational capacity conditions in construction activities
➤ Training Programs for staff/officer in construction system (14 courses)
➤ Training Programs on state management on construction for localities (5 courses)
– Training on management of urban construction and development
– Training on state management on construction for officers at commune level
– Training on capacity enhancement in handling violation in construction
– Training for lecturers according to Program 1961
– Other training courses
➤ Training Programs on professional skill for enterprises (5 courses)
➤ Training Programs on qualification for implementation of construction (7 courses)
➤ Training Programs on legal regulation
➤ Training Programs on labor safety, labor hygiene
➤ Training for laboratory management
➤ Other training courses
➤ Training on foreign language
➤ Training courses which have foreign factor
➤ Association training courses

Source: AMC

## 11.2 Dialogues with Construction Industries

### 11.2.1 First Dialogues with Construction Industries in April 2016

(1) Prior Explanation to Construction Industries

In May to June 2015, the Project team made arrangements for the meetings with VACC, VECAS and OCAJI to explain the contents of the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQSP).

In July 2015, the Project team prepared papers (detail explanation of CCQSP and future dialogues with them for outputs of CCQSP to obtain comments from them) and dispatched the papers to them.

Prior to have comments on each output (quality management, safety management, cost estimation, evaluation of engineering capacity and contract management) from VACC, VECAS and OCAJI, the Project team prepared questionnaires in each output and sent them to VACC, VEGAS and OCAJI.

The Project member met a representative of OCAJI in October 2015 and explained about the questionnaires and future activity. In addition, the Project member arranged to meet up with VECAS and VACC in November 2015 and explained of the questionnaires in each activity as well as the present status and future activity of CCQSP.

As requested and collected comments on each output in year 2015, the Project team compiled the responses to questionnaires from VACC, VECAS and OCAJI in the same format, which are enclosed in Annex 11-1.

(2) Report of First Dialogues

The Project team talked with International Cooperation Department (ICD) of MOC about confirmation of schedule and number of participants for first dialogues with construction industries in April 2016. JICA expert explained and coordinated with OCAJI and ICD explained and coordinated with VACC and VECAS respectively.

The first dialogues with construction industries were held in MOC meeting room for 3 days on April 19, 20 and 21, 2016.

1) Program of First Dialogues

The Program of Dialogues with Construction Industry is shown in Figure 11-2.

The Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project)

**DIALOGUE WITH VIETNAMESE CONSTRUCTION INDUSTRY**

**AGENDA**

Date: April 19, 2016  
 Time: 14:00 ~ 16:30  
 Venue: Room 452, MOC Building  
 Master of ceremonies: Dr. Toan, International Cooperation Department (ICD)

Program	Time	Activity	Presenter
1	14:00 ~ 14:05 (5 minutes)	MOC's opening Remarks	Dr. Toan, MOC
2	14:05 ~ 14:10 (5 minutes)	Presentation of Project Summary	Mr. Yamauchi, Project Team
3	14:10 ~ 14:30 (20 minutes)	Presentation of Output 1 <i>Title: Quality Management</i>	Mr. Mamiya, JICA Expert and Local staff
4	14:30 ~ 14:50 (20 minutes)	Discussion	Project Team (JICA Team and C/Ps)
5	14:50 ~ 15:10 (20 minutes)	Presentation of Output 2 <i>Title: Safety Management</i>	Dr. Ogasawara, JICA Expert and Local staff
6	15:10 ~ 15:30 (20 minutes)	Discussion	Project Team (JICA Team and C/Ps)
7	15:30 ~ 15:40 (10 minutes)	Break time	
6	15:40 ~ 16:00 (20 minutes)	Presentation of Output 3 <i>Title: Cost Estimation</i>	Dr. Kusano, JICA Expert and Local staff
7	16:00 ~ 16:25 (25 minutes)	Discussion	Project Team (JICA Team and C/Ps)
8	16:25 ~ 16:30 (5 minutes)	Wrap-up and Conclusion	JICA Expert for Output1,2 and 3 and C/Ps Dr. Toan, MOC

*Handouts:*

1. Agenda
2. Presentation materials
3. Standard plan for quality management and safety management and Guideline on cost estimation for indirect construction works in Viet Nam
4. Feedback sheet

Source: Project team

**Figure 11-2 Program of First Dialogues**

2) Participants

The date and number of participants in each association and photos are as follows.

**Table 11-1 Date and Participants in First Dialogues**

Date	Association	Participant	
		No. of Companies	No. of Persons
April 19 (Tue)	OCAJI	6	8
April 20 (Wed)	VECAS	11	13
April 21 (Thu)	VACC	5	5
Total		22	26

Source: Project team




In the dialogues, the Project team made the presentation of the output documents in the quality, safety and cost estimation management (Output 1 to 3) and various opinions, questions and comments were received from the participants.



3) Feedback

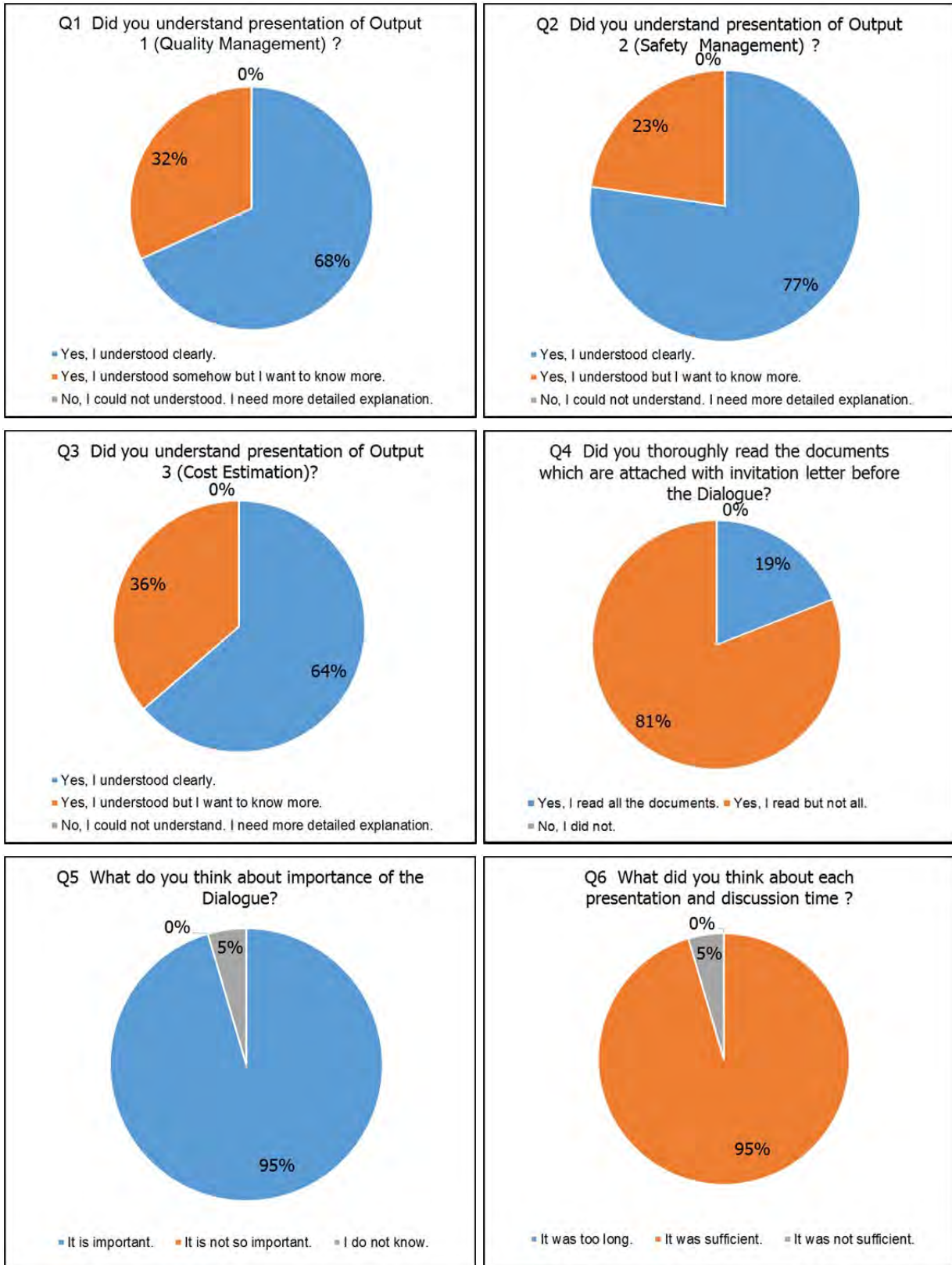
Feedback survey was carried out to the participants. The sheet is shown in Figure 11-3.

	<p>Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Project</p>																	
<p>Feedback Sheet of the Dialogue with Vietnamse Construction Industry 19th / 20th / 21th April, 2016</p>																		
Name: _____																		
Organization: _____																		
Department: _____																		
Position: _____																		
Please answer Q1 to Q8 to improve the effectiveness of the meeting for the next Dialogue.																		
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4" style="text-align: center;">Q1 Did you understand presentation of Output 1 (Quality Management) ?</td> </tr> <tr> <td style="width: 5%;">A1</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">Yes, I understood clearly.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>Yes, I understood but I want to know more..</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>No, I could not understood. I need more expaination in detailed.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			Q1 Did you understand presentation of Output 1 (Quality Management) ?				A1	1)	Yes, I understood clearly.	<input type="checkbox"/>		2)	Yes, I understood but I want to know more..	<input type="checkbox"/>		3)	No, I could not understood. I need more expaination in detailed.	<input type="checkbox"/>
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4" style="text-align: center;">Q4 Did you throughly read the documents which are attached with invitation letter before the Dialogue</td> </tr> <tr> <td style="width: 5%;">A4</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">Yes, I read all the documents.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>Yes, I read but not all.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>No, I did not.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			Q4 Did you throughly read the documents which are attached with invitation letter before the Dialogue				A4	1)	Yes, I read all the documents.	<input type="checkbox"/>		2)	Yes, I read but not all.	<input type="checkbox"/>		3)	No, I did not.	<input type="checkbox"/>
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	3)	No, I did not.	<input type="checkbox"/>															
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4" style="text-align: center;">Q2 Did you understand presentation of Output 2 )Safety Management) ?</td> </tr> <tr> <td style="width: 5%;">A2</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">Yes, I understood clearly.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>Yes, I understood but I want to know more.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>No, I could not understood. I need more expaination detailed.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			Q2 Did you understand presentation of Output 2 )Safety Management) ?				A2	1)	Yes, I understood clearly.	<input type="checkbox"/>		2)	Yes, I understood but I want to know more.	<input type="checkbox"/>		3)	No, I could not understood. I need more expaination detailed.	<input type="checkbox"/>
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4" style="text-align: center;">Q3 Did you understand presentation of Output 3 )Cost Estimation( ?</td> </tr> <tr> <td style="width: 5%;">A3</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">Yes, I understood clearly.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>Yes, I understood but I want to know more.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>No, I could not understood. I need more detailed expaination.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			Q3 Did you understand presentation of Output 3 )Cost Estimation( ?				A3	1)	Yes, I understood clearly.	<input type="checkbox"/>		2)	Yes, I understood but I want to know more.	<input type="checkbox"/>		3)	No, I could not understood. I need more detailed expaination.	<input type="checkbox"/>
Q3 Did you understand presentation of Output 3 )Cost Estimation( ?																		
A3	1)	Yes, I understood clearly.	<input type="checkbox"/>															
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4" style="text-align: center;">Q6 What did you think about the presentation and discussion time ?</td> </tr> <tr> <td style="width: 5%;">A6</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">It was too long.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>It was sufficient.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>It was not sufficient.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			Q6 What did you think about the presentation and discussion time ?				A6	1)	It was too long.	<input type="checkbox"/>		2)	It was sufficient.	<input type="checkbox"/>		3)	It was not sufficient.	<input type="checkbox"/>
Q6 What did you think about the presentation and discussion time ?																		
A6	1)	It was too long.	<input type="checkbox"/>															
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	3)	It was not sufficient.	<input type="checkbox"/>															
Please let us know, if you have any comments:																		
<div style="border: 1px solid black; width: 100%; height: 100%;"></div>																		

Source: Project team

**Figure 11-3 Feedback Survey Sheet of First Dialogues**

The results are shown in Figure 11-4. Among all participants, more that 60 % understood clearly for quality management and cost estimation and more than 75% for safety management.



Source: Project team

**Figure 11-4 Result of Feedback Survey of First Dialogues with Construction Industry**

After the first dialogues, summary of questions and answers in the dialogues was compiled, which is enclosed in Annex 11-2. The summary was sent to OCAJI, VECAS and VACC by JICA expert and ICD respectively.

### **11.2.2 Second Dialogues with Construction Industries in March 2017**

(1) Prior Discussion with C/Ps

In PCU meeting in January 2017, it was discussed that the second dialogues would be arranged in early March for Output 4 and Output 5. After the discussions, March 10 was the proposed day for the dialogues. ICD suggested to combine the dialogues with VACC, VECAS and OCAJI into one session. The Project team confirmed that the second dialogues would be arranged on March 10, 2017 for Output 4 and Output 5 with three organizations (VACC, VECAS and OCAJI) together.


JICA expert explained and coordinated with OCAJI and ICD explained and coordinated with VACC and VECAS respectively.

(2) Report of Second Dialogues


The Second dialogues with construction industries were held in room 252 at MOC for one day on March 10. In the dialogues, the Project team made the presentation of the output documents such as Construction Contractor Evaluation Method / Selection Mechanism, and Guideline on Contract Management and Contract Alteration, and various opinions, questions and comments were received from the participants. Questionnaire survey was also carried out to all participants.

1) Program of Second Dialogues

The Program of Dialogues with Construction Industry is shown in Figure 11-5.



The Project for Capacity Enhancement in Cost Estimation,  
Contract Management, Quality and Safety in Construction  
Investment Projects (CCQS Project)



**MINISTRY OF  
CONSTRUCTION**

**DIALOGUE WITH VIETNAMESE CONSTRUCTION INDUSTRY**

**AGENDA**

Date: March 10, 2017  
Time: 13:30 ~ 17:00  
Venue: Room 252, MOC Building  
Master of ceremonies: Dr. Toan, International Cooperation Department (ICD)

Program	Time	Activity	Presenter
1	13:30 ~ 13:35 (5 minutes)	MOC's opening Remarks	Dr. Toan, MOC
2	13:35 ~ 13:40 (5 minutes)	Presentation of Project Summary	Mr. Yamauchi, Project Team
3	13:40 ~ 14:25 (45 minutes)	Presentation of Output 4 Title: Construction Contractor Evaluation Method / Selection Mechanism	Mr. Narisawa and Nishino, JICA Expert and Local staff
4	14:25 ~ 15:10 (45 minutes)	Discussion	Project Team (JICA Team and C/Ps)
5	15:10 ~ 15:25 (15 minutes)	Break time	
6	15:25 ~ 16:10 (45 minutes)	Presentation of Output 5 Title: Guideline on Contract Management and alterations	Ms. Suzuki, JICA Expert and Local staff
6	16:10 ~ 16:55 (45 minutes)	Discussion	Project Team (JICA Team and C/Ps)
7	16:55 ~ 17:00 (5 minutes)	Wrap-up and Conclusion	MOC

*Handouts:*

1. Agenda
2. Presentation materials
3. Construction Contractor Evaluation Method / Selection Mechanism and Guideline on Contract Management and alterations
4. Feedback sheet

Source: Project team

**Figure 11-5 Program of Second Dialogues**



2) Participants

The number of participants in each associations and photos are as follows. In addition, lecturers from Viet Nam – Japan University (VJP<sup>1</sup>) and 6 students attended at the dialogues.

**Table 11-2 Number of Participants in Second Dialogues**

Association	Participant	
	No. of Companies	No of Persons
VACC	7	8
VECAS	8	11
OCAJI	3	3
Total	18	22

Source: Project team

Photo 11-3  
(View of the Dialogue)





Photo 11-4  
(View of the Dialogue)



<sup>1</sup> The Project for the Establishment of the Master Programs of Vietnam-Japan University

3) Feedback

Feedback survey was carried out to the participants. The sheet is shown in Figure 11-6.

 <b>MINISTRY OF CONSTRUCTION</b>	Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Project <b>Feedback Sheet of the Dialogue with Vietnamse Construction Industry</b> 10th March, 2017																																
Name: _____ Company: _____ Association: <input type="checkbox"/> VACC <input type="checkbox"/> VECAS <input type="checkbox"/> OCAJI																																	
Please answer Q1 to Q8 to improve the effectiveness of the meeting.																																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4">Q1 Did you understand presentation of Output 4? Evaluation Method on Engineering Capacity of Construction Contractors</td> </tr> <tr> <td style="width: 5%;">A1</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">Yes, I understood clearly.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>Yes, I understood somehow but I want to know more.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>No, I could not understand. I need explanation more detailed.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Q1 Did you understand presentation of Output 4? Evaluation Method on Engineering Capacity of Construction Contractors				A1	1)	Yes, I understood clearly.	<input type="checkbox"/>		2)	Yes, I understood somehow but I want to know more.	<input type="checkbox"/>		3)	No, I could not understand. I need explanation more detailed.	<input type="checkbox"/>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4">Q5 Why did not you read the documents throughly before the Dialogue?</td> </tr> <tr> <td style="width: 5%;">A5</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">I did not have enough time due to personal reason (busy in other works).</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>The documents were delivered late.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>The documents were not received.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Q5 Why did not you read the documents throughly before the Dialogue?				A5	1)	I did not have enough time due to personal reason (busy in other works).	<input type="checkbox"/>		2)	The documents were delivered late.	<input type="checkbox"/>		3)	The documents were not received.	<input type="checkbox"/>
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4">Q2 Did you understand presentation of Output 4? Selection Mechanism of Construction Contractor</td> </tr> <tr> <td style="width: 5%;">A2</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">Yes, I understood clearly.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>Yes, I understood but I want to know more.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>No, I could not understand. I need explanation more detailed.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Q2 Did you understand presentation of Output 4? Selection Mechanism of Construction Contractor				A2	1)	Yes, I understood clearly.	<input type="checkbox"/>		2)	Yes, I understood but I want to know more.	<input type="checkbox"/>		3)	No, I could not understand. I need explanation more detailed.	<input type="checkbox"/>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4">Q6 What did you think about the presentation time ?</td> </tr> <tr> <td style="width: 5%;">A6</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">It was too long.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>It was sufficient.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>It was not sufficient.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Q6 What did you think about the presentation time ?				A6	1)	It was too long.	<input type="checkbox"/>		2)	It was sufficient.	<input type="checkbox"/>		3)	It was not sufficient.	<input type="checkbox"/>
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4">Q3 Did you understand presentation of Output 5? Guideline on Contract Management and alterations</td> </tr> <tr> <td style="width: 5%;">A3</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">Yes, I understood clearly.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>Yes, I understood but I want to know more.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>No, I could not understand. I need explanation more detailed.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Q3 Did you understand presentation of Output 5? Guideline on Contract Management and alterations				A3	1)	Yes, I understood clearly.	<input type="checkbox"/>		2)	Yes, I understood but I want to know more.	<input type="checkbox"/>		3)	No, I could not understand. I need explanation more detailed.	<input type="checkbox"/>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="4">Q7 What did you think about the discussion time ?</td> </tr> <tr> <td style="width: 5%;">A7</td> <td style="width: 5%;">1)</td> <td style="width: 70%;">It was too long.</td> <td style="width: 15%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>2)</td> <td>It was sufficient.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td>3)</td> <td>It was not sufficient.</td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	Q7 What did you think about the discussion time ?				A7	1)	It was too long.	<input type="checkbox"/>		2)	It was sufficient.	<input type="checkbox"/>		3)	It was not sufficient.	<input type="checkbox"/>
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	3)	I do not know.	<input type="checkbox"/>																														
Please let us know, if you have any comments: <div style="border: 1px solid black; height: 60px; width: 100%;"></div>																																	

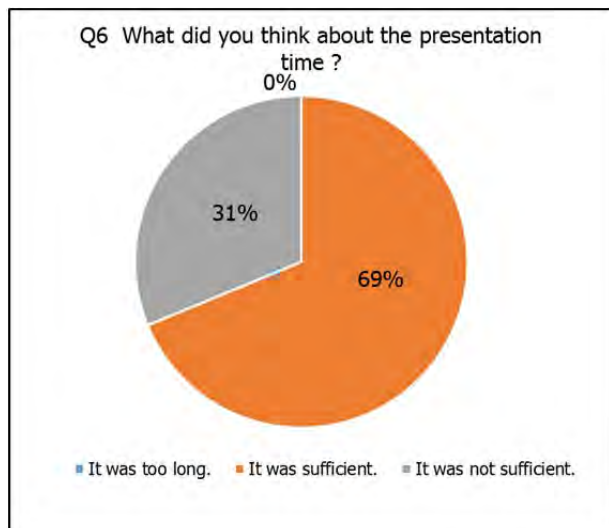
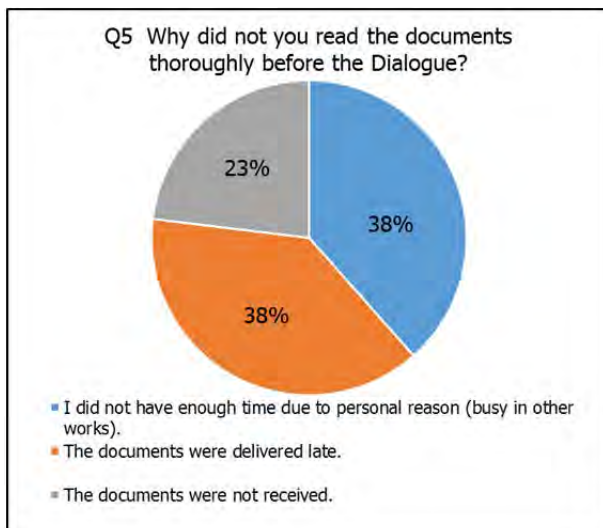
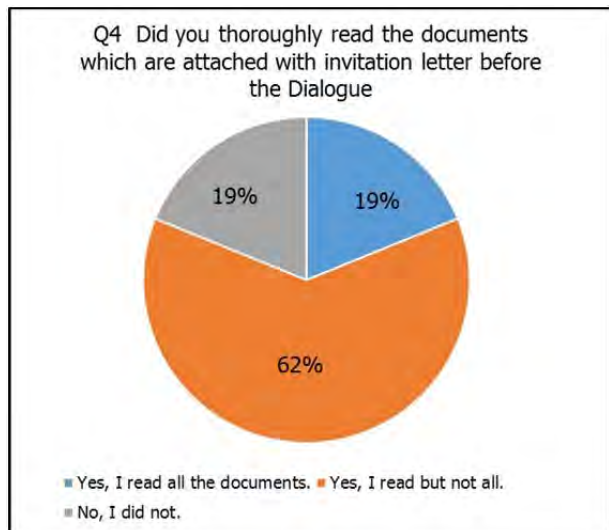
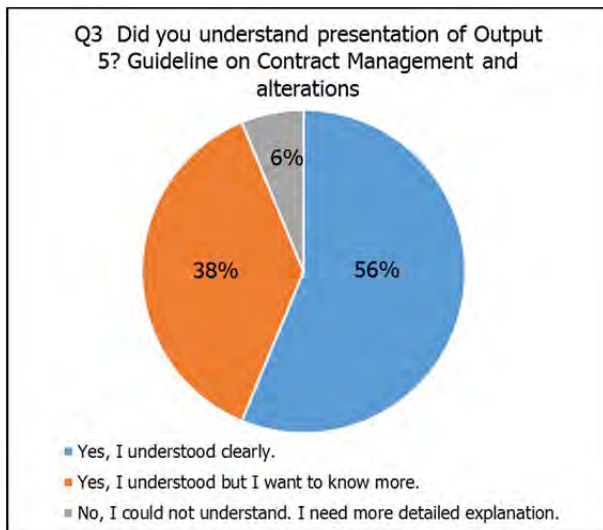
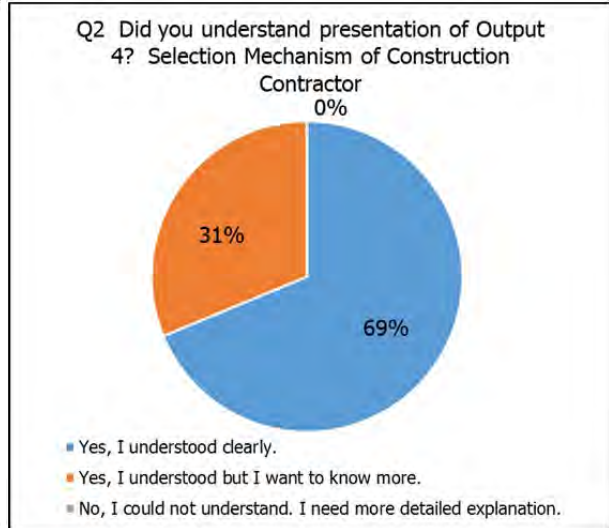
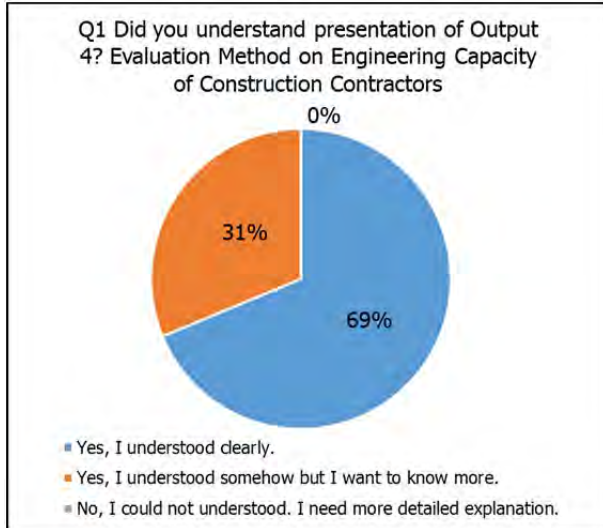
Source: Project team

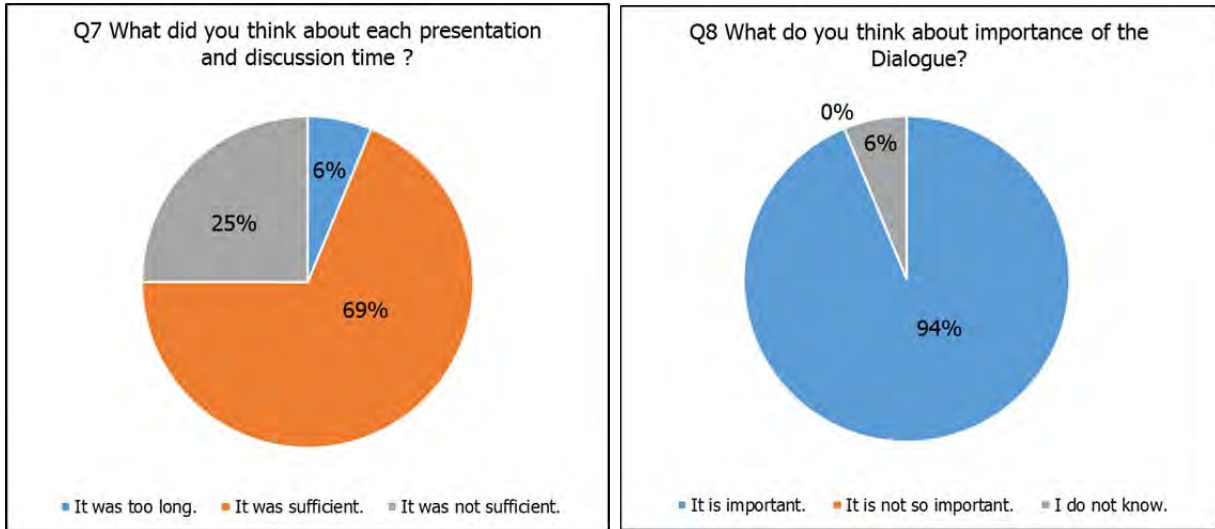
**Figure 11-6 Feedback Survey Sheet of Second Dialogues**

The survey results are shown in Figure 11-7. Among all participants, approximately 70% (Q 1 and Q 2) understood clearly for Evaluation Method of Engineering Capacity of Construction

Contractors and Selection Mechanism, and 56 % (Q 3) for Guideline on Contract Management and Alterations.

About Presentation time (Q 6) and discussion time (Q 7), approximately 70% of the participants selected “It was sufficient”. About importance of the dialogues (Q 8), the 94% of the participants answered “It is important”.





Source: Project team

**Figure 11-7 Result of Feedback Survey of Second Dialogues with Construction Industry**

After the second dialogues, summary of questions and answers in the dialogues was compiled, which is enclosed in Annex 11-3. The summary is sent to OCAJI, VECAS and VACC by JICA expert and ICD respectively.





No.	Time	Activity	Presenter		
			Hanoi 25/Nov.	Da Nang 2/Dec.	HCM city 8/Dec.
0	7:45 - 8:15 (30 minutes)	Registration	MOC		
1	8:15 - 8:20 (5 minutes)	Opening remarks – Vietnamese side	Leader from MOC	MOC	
2	8:20 - 8:30 (10 minutes)	Introduction of JICA Project	JICA Mr. Anzo Mr.Yamauchi	Mr.Yamauchi	
3	8:30 - 9:00 (30 minutes)	Current Safety Management and Coming Circular	SACQI Expert		
4	9:00 - 9:30 (30 minutes)	Presentation on safety management	Mr. Takada + C/P		
5	9:30 - 9:45 (15 minutes)	Discussion (Q&A) + Comprehension check (1)	JICA expert + C/Ps		
6	9:45-9:55 (10 minutes)	Break			
7	9:55 - 10:25 (30 minutes)	Introduction on new contents of Circular 46/2015	SACQI Expert		
8	10:25 - 10:55 (30 minutes)	Presentation on quality management	Mr. Hayashi + C/P		
9	10:55-11:10 (15 minutes)	Discussion (Q&A) + Comprehension check (2)	JICA expert + C/Ps		
10	11:10 - 11:40 (30 minutes)	Introduction of regulation (Decree59,Circular 17)	CAMA Expert		
11	11:40 - 13:00 (80 minutes)	Lunch break			
12	13:00 - 13:30 (30 minutes)	Presentation on evaluation method of const.-contractor and work performance evaluation	Mr. Narisawa + C/P		
13	13:30 - 13:45 (15 minutes)	Discussion (Q&A) + Comprehension check (3)	JICA expert + C/Ps		
14	13:45 - 14:15 (30 minutes)	Introduction of Circular 06/2016	CED Expert		
15	14:15 - 14:45 (30 minutes)	Presentation on cost estimation for indirect construction works	Mr.Kusano + C/P		
16	14:45 - 15:00 (15 minutes)	Discussion (Q&A) + Comprehension check (4)	JICA expert + C/Ps		
17	15:00 - 15:10 (10 minutes)	Break			
18	15:10 - 15:40 (30 minutes)	Introduction of regulation (Decree37, Circular7,8,9)	CED Expert		
19	15:40 - 16:10 (30 minutes)	Presentation on contract management	Mr. Yamauchi & Ms. Suzuki + C/P		
20	16:10 - 16:25 (15 minutes)	Discussion (Q&A) + Comprehension check (5) + Feedback sheet (6)	JICA expert + C/Ps		
21	16:25 - 16:35 (10 minutes)	Closing Remarks	MOC		

Source: Project team

**Figure 11-9 Program of First Training Workshops**

2) Participants

The number of participants and photos are shown in below.

**Table 11-3 Number of Participants of First Training Workshops**

Date and Time	Place	No of Participants	Type of Organization			
November 25 (8:15-17:10)	Ha Noi AMC Training Center	111	Other Ministries: 7	MOC: 39	PMUs: 15	Enterprises: 12
			DOC, DOT, DO: 36	Others: 2		
December 2 (8:15-17:20)	Da Nang Administrative Center	85	Other Ministries: -	MOC: 10	PMUs: 12	Enterprises: 14
			DOC, DOT, DO: 31	Others: 18		
December 8 (8:15-17:00)	HCM City Conference Center	102	Other Ministries: -	MOC: 11	PMUs: 7	Enterprises: 16
			DOC, DOT, DO: 68	Others: -		

Photo 11-5 : Ha Noi  
(MOC • Deputy Minister Speech)



Photo 11-6 : Ha Noi  
(View of the Venue)



Photo 11-7 : Da Nang  
(View of the Venue)



Photo 11-8 : Ho Chi Minh City  
(View of the Venue)





3) Comprehension tests

Comprehension tests were conducted in the training workshops. The summary result shows in Section 11.3.4 Third Training Workshops in November and December 2017.

4) Feedback

Questionnaire survey was carried out to the participants in Ha Noi, Da Nang and Ho Chi Minh City. The questionnaire sheet and the results are shown below.

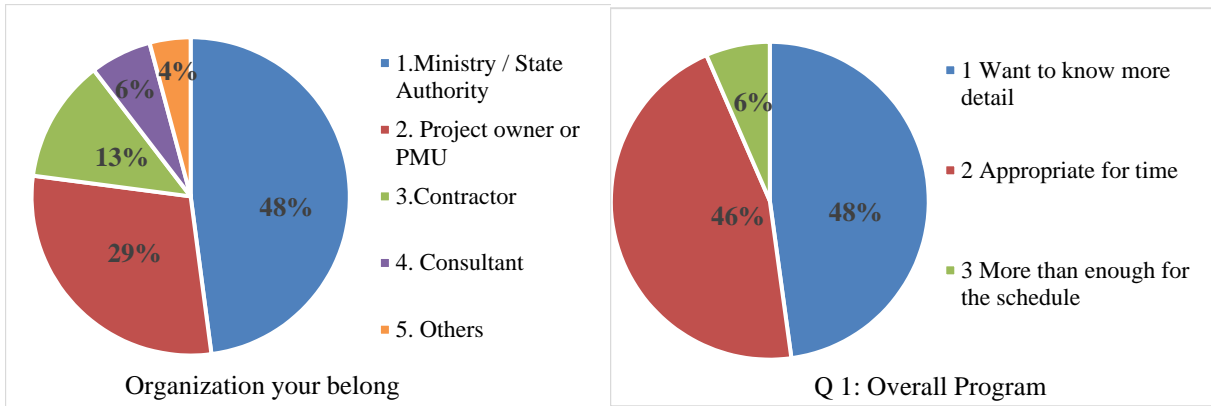


	Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Project				
Feedback Sheet of the Training Workshop					
<b>Check in the Box: ex. <input checked="" type="checkbox"/></b>					
Organization you belong	<input type="checkbox"/> 1. Ministry / State Authority <input type="checkbox"/> 2. Project owner or PMU <input type="checkbox"/> 3. Contractor <input type="checkbox"/> 4. Consultant <input type="checkbox"/> 5. Others				
Date                    ____ day    ____ month	Location <input type="checkbox"/> 1. HaNoi <input type="checkbox"/> 2. Da Nang <input type="checkbox"/> 3. Ho Chi Minh				
Please answer Q1 to Q7 to improve the effectiveness of the Training Workshop.					
<b>Q1 Overall Program</b>					
A1 Want to know more detail <input type="checkbox"/>	A2 Appropriate for time <input type="checkbox"/>	A3 More than enough for the schedule <input type="checkbox"/>			
<b>Q2 Your Specialty (Multiple answer)</b>					
A1 Quality <input type="checkbox"/>	A2 Safety <input type="checkbox"/>	A3 Evaluation Method <input type="checkbox"/>	A4 Cost Estimation <input type="checkbox"/>	A5. Contract Management <input type="checkbox"/>	A6. Not applicable <input type="checkbox"/>
<b>Q3 About Safety Which part beneficial for your future work (Multiple answer)</b>					
A1. Current Safety Management and Coming Circular <input type="checkbox"/>		A2. Standard Plan for Safety Management <input type="checkbox"/>		A3. Not applicable <input type="checkbox"/>	
<b>Q4 About Quality Which part beneficial for your future work (Multiple answer)</b>					
A1. Circular 46 <input type="checkbox"/>		A2. Standard Plan for Quality Management <input type="checkbox"/>		A3. Not applicable <input type="checkbox"/>	
<b>Q5 About Evaluation Method Which part beneficial for your future work (Multiple answer)</b>					
A1. Regulation (Decree59,Circular16) <input type="checkbox"/>		A2. Evaluation Method of Contractor & Work Performance Evaluation <input type="checkbox"/>		A3. Not applicable <input type="checkbox"/>	
<b>Q6 About Cost Estimation Which part beneficial for your future work (Multiple answer)</b>					
A1. Regulation(Circular6) <input type="checkbox"/>		A2. Guideline for Cost Estimation Guideline <input type="checkbox"/>		A3. Not applicable <input type="checkbox"/>	
<b>Q7 About Contract Management Which part beneficial for your future work (Multiple answer)</b>					
A1. Regulation(Decree37, Circular7,8,9) <input type="checkbox"/>		A2. Guideline for Contract Management <input type="checkbox"/>		A3. Not applicable <input type="checkbox"/>	
If you have any Comments, please feel free to let me know.					

Source: Project team

**Figure 11-10 Feedback Sheet of First Training Workshops**

As for type of organization, participants from government were 77% (e.g. ministry / state authority: 48%, project owner or PMU: 29%), contractors were 13% and consultants were 6% respectively. As for overall program, 48 % of participants selected “Want to know more detail” and 46 % selected “Appropriate for time”.



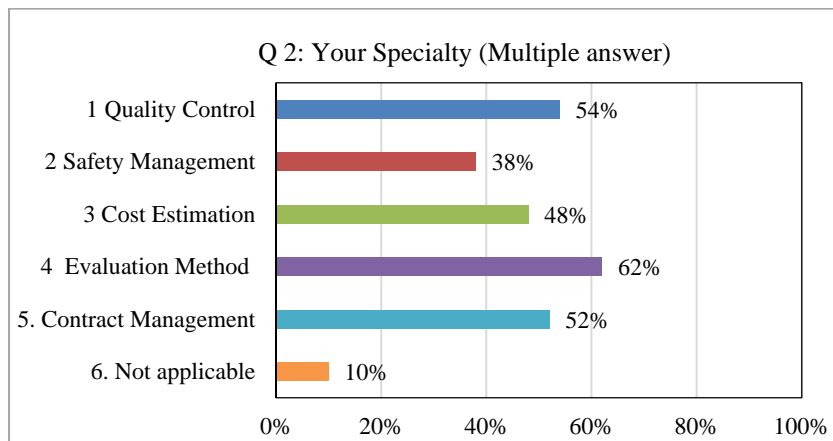
Source: Project team

**Figure 11-11 Type of Organization of Participants of First Training Workshops**

Source: Project team

**Figure 11-12 Assessment on Contents of First Training Workshops**

The percentages of participant’s specialty are shown below.

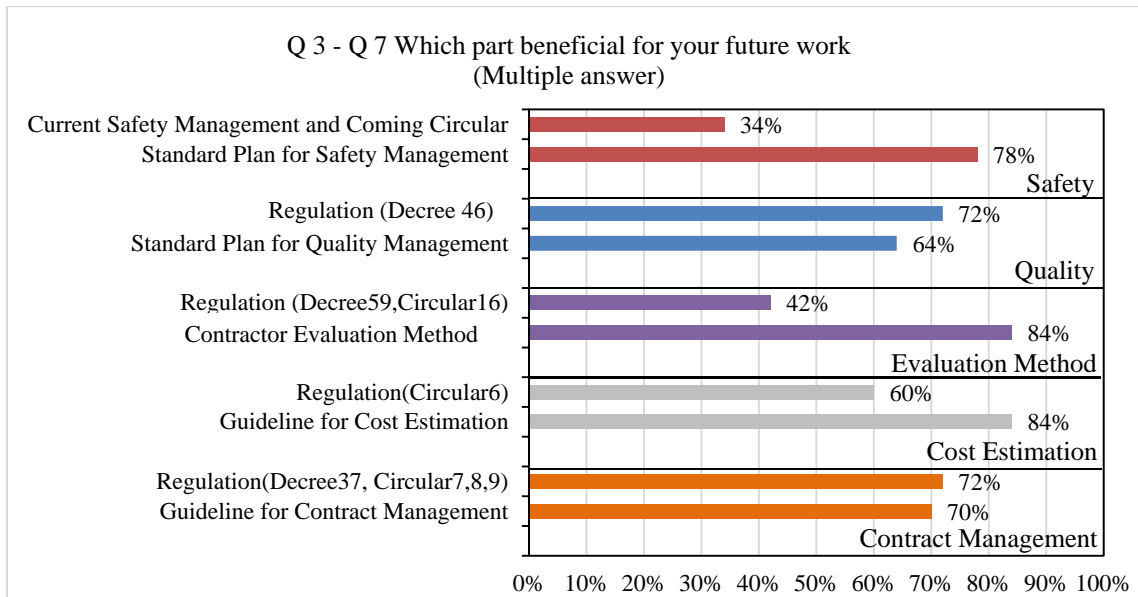


Source: Project team

**Figure 11-13 Participant’s Specialty of First Training Workshops**

Figure 11-14 summarizes the question 3 to 7 for each output (Safety, Quality, Evaluation Method, Cost Estimation and Contract Management) into the same graph.

Regarding the result of “Which part beneficial for your future work”, “Guideline for Cost Estimation” and “Evaluation Method of Contractor” shows the largest figure (84%), followed by “Standard Plan for Safety management” (78%), “Regulation Decree 46” for Quality (72%) and “Regulation Decree 37, Circular 7, 8, 9” (72%) and “Guideline for Contract Management” (70%).



Source: Project team

**Figure 11-14 Degree of Interest on Each Output of First Training Workshops**

### 11.3.3 Second Training Workshops in June 2017

#### (1) Prior Discussions

For second training workshops, JICA Viet Nam Office requested MOC to invite more PMUs, especially those implementing ODA projects. Subsequently, JICA Office provided the list of PMUs etc. to MOC.

Regarding contents of training workshops in June for Output 4 and Output 5, the Project team had detailed discussions with SACE and CAMA in CPMU meetings and the program for training workshops was finalized.

In the initial plan, training workshops would be held at two locations, Ha Noi and Ho Chi Minh City. MOC requested the Project team to add location Can Tho. The Project team discussed and finally agreed to hold training workshops in three locations.



#### (2) Report of Second Training Workshops

Training workshops were successfully implemented on June 16 in Hanoi, June 22 in Ho Chi Minh City and June 23 in Can Tho in the year 2017. C/Ps and JICA experts collaborated presentation and responded to questions.

##### 1) Program of Second Training Workshops

The Program of Second Training Workshops is shown in Figure 11-15.

Discussion results (questions and answers) in each presentation are compiled in Chapter 9 for Output 4 (Evaluation of Engineering Capacity) and Chapter 10 for Output 5 (Contract Management).

	The Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project)		
MINISTRY OF CONSTRUCTION	<b>TRAINING WORKSHOP</b>		
<b>DATE AND PLACE</b>			
<i>Date</i>	<i>Place and Venue</i>		
June 16 (Fri)	Ha Noi	Army Guest House	
June 22 (Thu)	HCM city	272 Conference Center	
June 23 (Fri)	Can Tho	Ninh Kieu Riverside Hotel	
		08:30 – 12:30	
<b>PROGRAM</b>			
<b>No.</b>	<b>Time</b>	<b>Activity</b>	<b>Presenter</b>
0	08:00 - 08:30 (30 minutes)	Registration	MOC
1	08:30 - 08:40 (10 minutes)	Opening remarks – Vietnamese side	MOC
2	08:40 - 08:50 (10 minutes)	Introduction of JICA Project	JICA Mr. Anzo + Mr. Yamauchi (Ha Noi)   Mr. Yamauchi (HCM city + Can Tho)
3	08:50 - 09:15 (25 minutes)	Engineering Capacity Evaluation Method	CAMA Expert
4	09:15-10:00 (45 minutes)	Work Performance Evaluation / Selection Mechanism	Mr. Narisawa + Mr. Nishino and C/P
5	10:00 - 10:30 (30 minutes)	Discussion (Q&A) + Comprehension check (1)	JICA expert + C/Ps
6	10:30 - 10:45 (15minutes)	Break	
7	10:45 - 11:30 (45minutes)	Guideline on Contract Management and Contract Alteration	Ms. Suzuki + C/P
8	11:30 - 11:55 (25 minutes)	Engineering, Procurement and Construction Contracts (Circular 30) and Adjustment method for construction contract price	CED Expert
9	11:55 - 12:25 (30 minutes)	Discussion (Q&A)+ Comprehension check (2)	JICA expert + C/Ps
10	12:25 - 12:30 (5 minutes)	Closing Remarks	MOC
11	12:30	Lunch	
<b>Handouts:</b>			
1. Agenda			
2. Project brochure			
3. Presentation materials			
4. Construction Contractor Evaluation Method / Selection Mechanism			
Guideline on Contract Management and Contract Alteration			
5. Comprehension check sheet			
6. Feedback sheet			

Source: Project team

**Figure 11-15 Program of Second Training Workshops**

## 2) Participants

The number of participants and photos are shown below. The participants were from MOC, MOT, other ministries, DOC, DOT, PMUs, lecturers of university, contractors, consultants and other enterprises.



**Table 11-4 Number of Participants of Second Training Workshops**

Date and Time	Location	No of Participants	Type of Organization and Participants no.			
June 16 (8:30-12:30)	Ha Noi Army Guest House	110	Other Ministries:	11	PMUs:	17
			DOC & Other Dos:	36	MOC:	23
			Enterprises:	12	Others:	11
June 22 (8:30-12:30)	HCM CITY Conference Center	79	Other Ministries:	-	PMUs:	11
			DOC & Other Dos:	32	MOC:	12
			Enterprises:	11	Others:	13
June 23 (8:30-12:30)	Can Tho Ninh Kieu Riverside Hotel	114	Other Ministries:	-	PMUs:	38
			DOC & Other Dos:	45	MOC:	9
			Enterprises:	4	Others:	18

Source: Project team

Photo 11-9 : Ha Noi  
(View of the Venue)



Photo 11-10 : Can Tho  
(View of the Venue)



Photo 11-11 : Ho Chi Minh City  
(View of the Venue)



Photo 11-12 : Ho Chi Minh City  
(View of the Venue)






### 3) Comprehension tests

Comprehension tests were conducted in the training workshops, similar to those in the workshops in 2016. These tests are to measure understanding level of engineering capacity evaluation method / work performance evaluation and contract management & contract alteration. The summary result shows in Section 11.3.4 Third Training Workshops in November and December 2017.



4) Feedback

Questionnaire survey was carried out to the participants in Ha Noi, Ho Chi Minh City and Can Tho. The feedback sheet is shows in Figure 11-16 and 11-17.

	Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Project																																																							
MINISTRY OF CONSTRUCTION	Feedback Sheet of the 2nd Training Workshop																																																							
<b>Check in the Box: ex. <input checked="" type="checkbox"/></b>																																																								
Organization you belong	<input type="checkbox"/> 1.Ministry / State Authority	<input type="checkbox"/> 2. Project owner or PMU																																																						
	<input type="checkbox"/> 3.Contractor	<input type="checkbox"/> 4. Consultant																																																						
	<input type="checkbox"/> 5. Others																																																							
Date	____ day ____ month	Location <input type="checkbox"/> 1.HaNoi <input type="checkbox"/> 2. Ho Chi Minh <input type="checkbox"/> 3.Can Tho																																																						
Please answer Q1 to Q12 to improve the effectiveness of the Training Workshop.																																																								
<b>Q1 Your Specialty (Multiple answer)</b>																																																								
A1 Evaluation Method	A2 Contract Management	A3 Not applicable																																																						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																						
<b>Q2 Did you attend the 1<sup>st</sup> training workshop last year?</b>																																																								
A1 Yes ( Please answer below the Questions )	A2 No ( Please answer below the Questions )																																																							
<input type="checkbox"/>	<input type="checkbox"/>																																																							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3"><b>Q3 Level of Understanding of Engineering Capacity Evaluation Method / Work Performance Evaluation</b></td> <td colspan="3"><b>Q6 Understanding of Engineering Capacity Evaluation Method/ Work Performance Evaluation</b></td> </tr> <tr> <td style="width: 33%;">A1. Yes, I understood clearly more compare with last time.</td> <td style="width: 33%;">A2. Yes, I finally understood compare with last time..</td> <td style="width: 33%;">A3. No, I still could not understood . I need explanation more detailed.</td> <td style="width: 33%;">A1. Yes, I understood clearly.</td> <td style="width: 33%;">A2. Yes, I understood somehow but I want to know more.</td> <td style="width: 33%;">A3. No, I could not understood. I need explanation more detailed.</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td colspan="3"><b>Q4 Understanding of Selection Mechanism (This is new subject)</b></td> <td colspan="3"><b>Q7 Understanding of Selection Mechanism</b></td> </tr> <tr> <td style="width: 33%;">A1. Yes, I understood clearly.</td> <td style="width: 33%;">A2. Yes, I understood somehow but I want to know more.</td> <td style="width: 33%;">A3. No, I could not understood. I need explanation more detailed.</td> <td style="width: 33%;">A1. Yes, I understood clearly.</td> <td style="width: 33%;">A2. Yes, I understood somehow but I want to know more.</td> <td style="width: 33%;">A3. No, I could not understood. I need explanation more detailed.</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td colspan="3"><b>Q5 Level of Understanding of Contract Management and Contract Alteration</b></td> <td colspan="3"><b>Q8 Understanding of Contract Management and Contract Alteration</b></td> </tr> <tr> <td style="width: 33%;">A1. Yes, I understood clearly more compare with last time.</td> <td style="width: 33%;">A2. Yes, I finally understood compare with last time..</td> <td style="width: 33%;">A3. No, I still could not understood . I need explanation more detailed.</td> <td style="width: 33%;">A1. Yes, I understood clearly.</td> <td style="width: 33%;">A2. Yes, I understood somehow but I want to know more.</td> <td style="width: 33%;">A3. No, I could not understood. I need explanation more detailed.</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>			<b>Q3 Level of Understanding of Engineering Capacity Evaluation Method / Work Performance Evaluation</b>			<b>Q6 Understanding of Engineering Capacity Evaluation Method/ Work Performance Evaluation</b>			A1. Yes, I understood clearly more compare with last time.	A2. Yes, I finally understood compare with last time..	A3. No, I still could not understood . I need explanation more detailed.	A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understood. I need explanation more detailed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Q4 Understanding of Selection Mechanism (This is new subject)</b>			<b>Q7 Understanding of Selection Mechanism</b>			A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understood. I need explanation more detailed.	A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understood. I need explanation more detailed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Q5 Level of Understanding of Contract Management and Contract Alteration</b>			<b>Q8 Understanding of Contract Management and Contract Alteration</b>			A1. Yes, I understood clearly more compare with last time.	A2. Yes, I finally understood compare with last time..	A3. No, I still could not understood . I need explanation more detailed.	A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understood. I need explanation more detailed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q3 Level of Understanding of Engineering Capacity Evaluation Method / Work Performance Evaluation</b>			<b>Q6 Understanding of Engineering Capacity Evaluation Method/ Work Performance Evaluation</b>																																																					
A1. Yes, I understood clearly more compare with last time.	A2. Yes, I finally understood compare with last time..	A3. No, I still could not understood . I need explanation more detailed.	A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understood. I need explanation more detailed.																																																			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																			
<b>Q4 Understanding of Selection Mechanism (This is new subject)</b>			<b>Q7 Understanding of Selection Mechanism</b>																																																					
A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understood. I need explanation more detailed.	A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understood. I need explanation more detailed.																																																			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																			
<b>Q5 Level of Understanding of Contract Management and Contract Alteration</b>			<b>Q8 Understanding of Contract Management and Contract Alteration</b>																																																					
A1. Yes, I understood clearly more compare with last time.	A2. Yes, I finally understood compare with last time..	A3. No, I still could not understood . I need explanation more detailed.	A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understood. I need explanation more detailed.																																																			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																			
<div style="border: 1px dashed black; padding: 5px; display: inline-block;"> <b>Let's Move to Next Question (Q9)</b>  </div>																																																								

Source: Project team

**Figure 11-16 Feedback Sheet (1) of Second Training Workshops**

<b>Q9 If AMC incorporate “Engineering Capacity Evaluation Method” and “Contract Management and Contract Alteration” in their program, do you attend such a training course.</b>		
A1 Really want to attend	A2 Depend on the schedule	A3 Not interested
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Q10 Regarding Engineering Capacity Evaluation Method and Selection Mechanism.</b>		
A1 It should be introduced	A2 More consideration is necessary before introduce.	A3 It is too early to introduce.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Q11 Regarding Guideline on Contract Management and Contract Alteration</b>		
A1 It should be introduced	A2 More consideration is necessary before introduce.	A3 It is too early to introduce.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>Q12 Do you think our guideline / methods help for the management of public construction to approach the international level?</b>		
A1 Agree.	A2 Agree somewhat	A3 Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Please let us know, if you have any comments:**

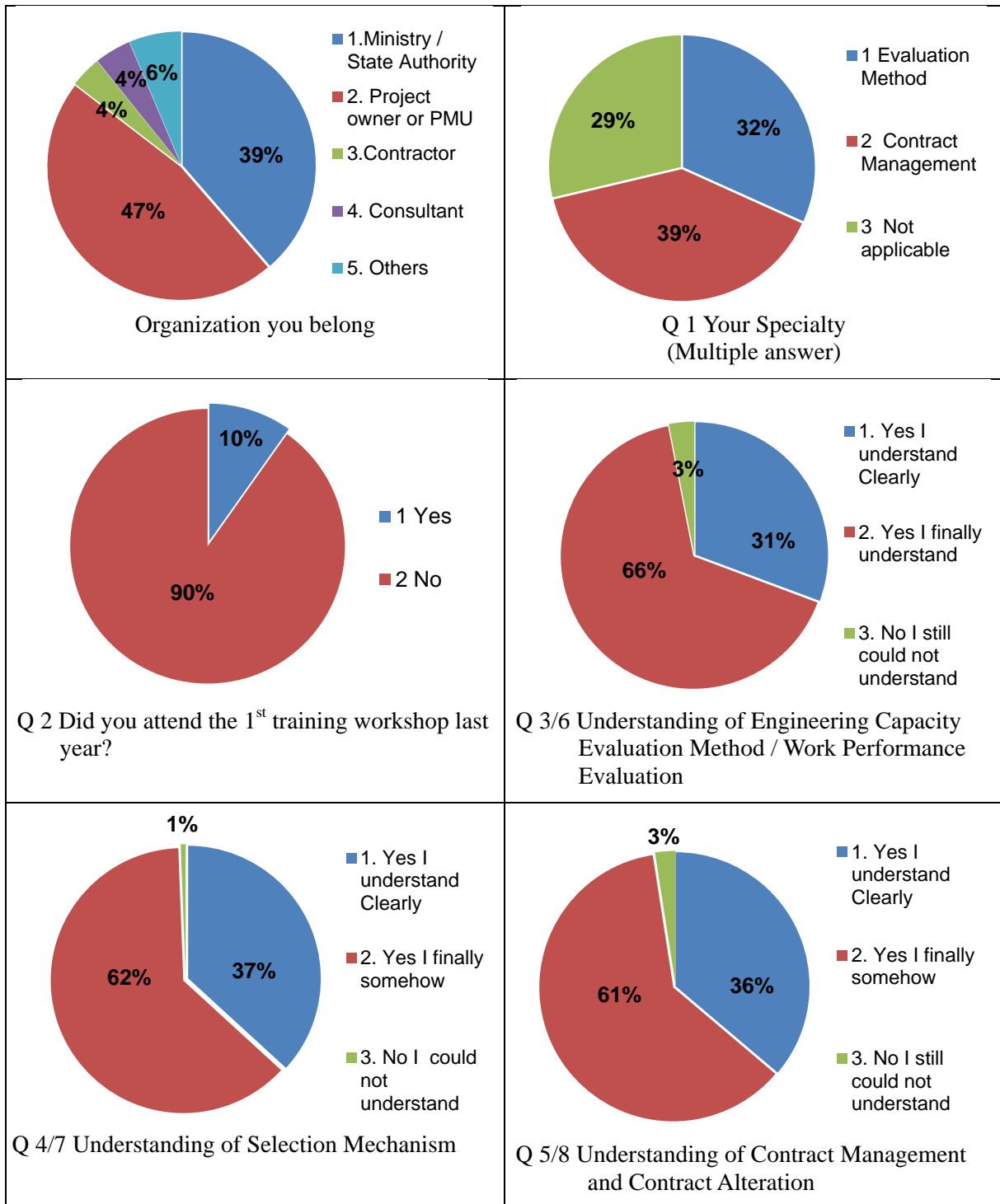
**Thank you for your Cooperation**

Source: Project team

**Figure 11-17 Feedback Sheet (2) of Second Training Workshops**

The results of feedback are shown in Figure 11-18 and 11-19.

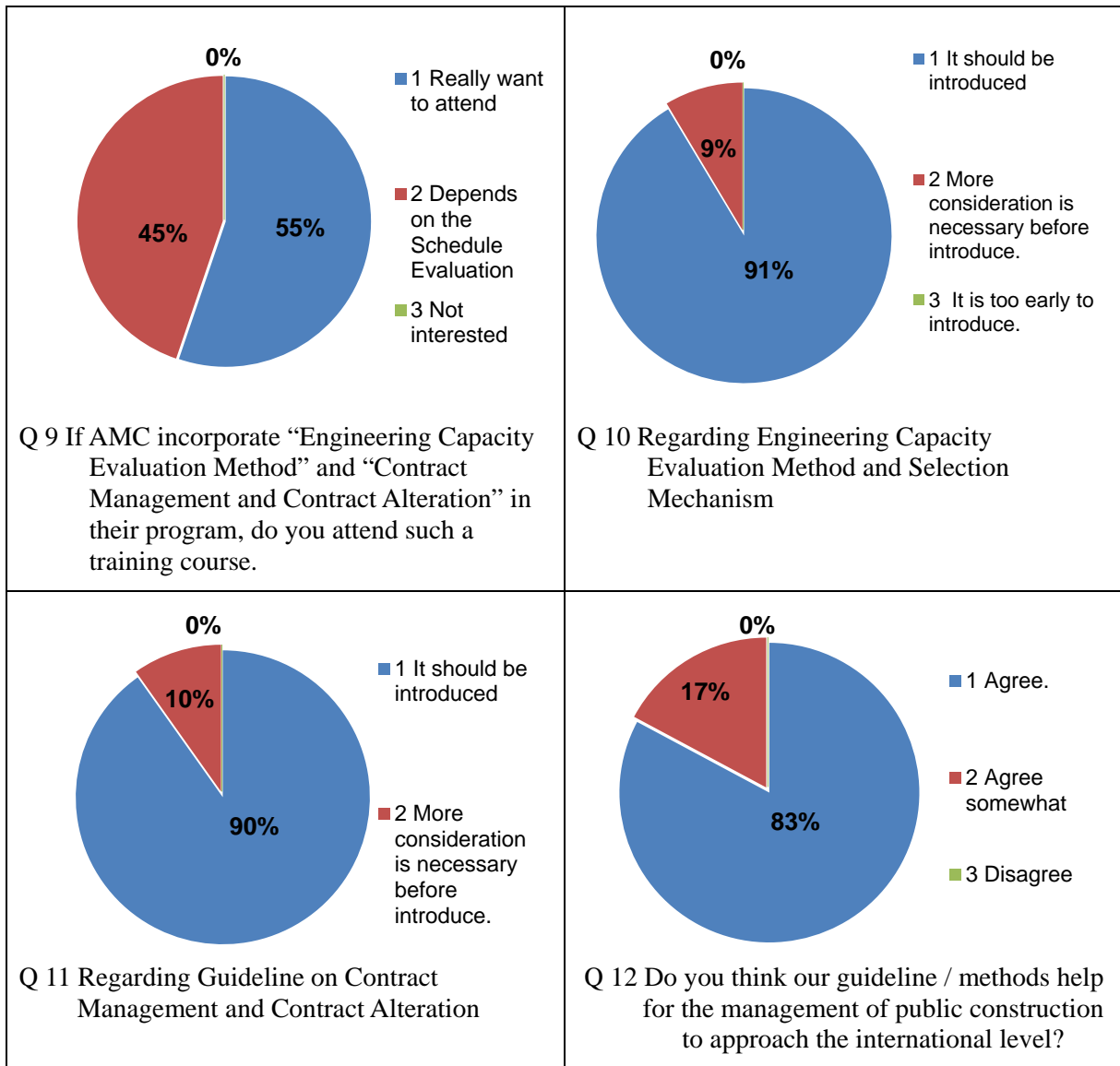
- ♦ As for type of organization, participants from government were 86% (e.g. ministry /state authority: 39%, project owner or PMU: 47%), contractors were 4% and consultants were 4%.
- ♦ As for participant’s specialty (Q 1), Evaluation method was 32% and Contract management was 39%.
- ♦ As for attend or not in 2016 (Q 2), about 10 participants attended in 2016.
- ♦ As for understanding level, among all participants, 97% (total of 1 and 2) understood for Engineering Capacity Evaluation Method / Work Performance Evaluation (Q 3/6), 99% (total of 1 and 2) for Selection Mechanism (Q 4/7) and 97% (total of 1 and 2) for Contract Management and Alterations (Q 5/8).
- ♦ As for AMC training Course (Q 9), more than 50% of participants were eager to attend a training course.



Source: Project team

**Figure 11-18 Results of Questions in Feedback Sheet of Second Training Workshops (1)**

- ◆ Regarding Engineering Capacity Evaluation Method and Selection Mechanism (Q 10), 91% of the participants responded to “It should be introduced” and regarding Guideline Contract management and Contract Alteration (Q 11), 90% of the participants responded to “It should be introduced”.
- ◆ About international level (Q 12), 83% of the participants responded to “Agree” for the management of public construction to approach the international level. This figure is higher than the figures in the objectively verifiable indicators in Project Design Matrix (PDM).



Source: Project team

**Figure 11-19 Results of Questions in Feedback Sheet of Second Training Workshops (2)**

#### **11.3.4 Third Training Workshops in November and December 2017**

(1) Prior Discussions

MOC and JICA team discussed the venue and date for third training workshops. The Training workshops for Output 1, Output 2 and Output 3 (additional activities) were decided in 4 locations including Ha Noi, Da Nang, Can Tho and Ho Chi Minh City in November and December. Details are as follows:

- Ha Noi: November 17, Trade Union Hotel
- Da Nang: November 24, Avatar Hotel
- Can Tho: November 30, Ninh Kieu Riverside Hotel
- HCM City: December 1, Dai Nam Hotel

MOC prepared invitation to participants. Number of participants for each location was approximately the same number of participants in the previous training workshops.

The JICA team sent invitation to OCAJI and Vietnam Japan University (Dr. Phan Le Binh) in addition.

Besides presentation on the project output documents, C/Ps in SACQI and SACE had presentation on related topics. The presentation files prepared by C/Ps were sent to the Project team in due course.

(2) Report of Third Training Workshops



Training workshops were successfully implemented on November 17 in Hanoi, November 24 in Da Nang, November 30 in Can Tho and December 1 in Ho Chi Minh City in the year 2017. C/Ps and JICA experts collaborated presentation and responded to the questions as same as before.

1) Program of Third Training Workshops

The Program of Third Training Workshops is shown in Figure 11-20.

Discussion results (questions and answers) in each presentation are compiled in Chapter 6 for Output 1 (Quality Management), in Chapter 7 for Output 2 (Safety and Environment Management) and Chapter 8 for Output 3 (Cost Estimation).

Due to logistic matter, the training workshop in Can Tho started earlier (registration at 7:45 until 8:15), and each activity commenced 15 minutes earlier than the program in figure below.

 <b>MINISTRY OF CONSTRUCTION</b>	<b>The Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project)</b>		
<b>TRAINING WORKSHOP</b>			
<b>DATE AND PLACE</b>			
<b>Date</b>	<b>Place and Venue</b>		
November 17 (Fri)	Ha Noi	Viet Nam Trade Union Hotel	
November 24 (Fri)	Da Nang	Avatar Da Nang hotel	
<b>Date</b>	<b>Place and Venue</b>		
November 30 (Thu)	Can Tho	Ninh Kiều Riverside Hotel	
December 01 (Fri)	HCM City	Dai Nam Hotel	
<b>PROGRAM (Time 08:30 –16:10)</b>			
No.	Time	Activity	Presenter
0	08:00 - 08:30 (30 minutes)	Registration	MOC
1	08:30 - 08:40 (10 minutes)	Opening remarks – Vietnamese side	MOC
2	08:40 - 08:50 (10 minutes)	Introduction of JICA Project	JICA + Mr. Yamauchi (Ha Noi)   Mr. Yamauchi (Others)
3	08:50 - 09:15 (25 minutes)	Quality Management	SACQI Expert
4	09:15 - 10:00 (45 minutes)	Guideline for Quality Supervision and Inspection for SAs and POs/PMUs	Mr. Narisawa + Mr. Yamauchi and C/P
5	10:00 - 10:30 (30 minutes)	Discussion (Q&A) + Comprehension check (1)	JICA expert + C/Ps
6	10:30 - 10:45 (15 minutes)	Break	
7	10:45 - 11:10 (25 minutes)	Safety and Environment Management	SACQI Expert
8	11:10 - 11:55 (45 minutes)	Standard Plan for Environment Management, Guideline for Safety & Environmental Inspection for SAs and POs/PMUs	Mr. Shintani + C/P
9	11:55 - 12:25 (30 minutes)	Discussion (Q&A) + Comprehension check (2)	JICA expert + C/Ps
10	12:25 – 14:00	Lunch Break	
11	14:00 - 14:20 (20 minutes)	Cost Estimation System in Japan	Mr. Takada
12	14:20 - 15:05 (45 minutes)	Guideline on Cost Estimation for Construction Contractor Works	Mr. Kusano + Mr. Tochinaka and C/P
13	15:05 - 15:30 (25 minutes)	Domestic Project of Improvement for Cost Estimation System	SACE Expert
14	15:30 - 16:00 (30 minutes)	Discussion (Q&A) + Comprehension check (2)	JICA expert + C/Ps
15	16:00 - 16:10 (10 minutes)	Closing Remarks	MOC
<b>Handouts:</b>			
1. Agenda			
2. Presentation materials			
3. Guideline for Quality Supervision and Inspection for State Authorities and POs/PMUs			
Standard Plan for Safety and Environment Management			
Guideline for Safety & Environmental Inspection for State Authorities and POs/PMUs			
Guideline on Cost estimation for Construction Contractor Works			
4. Comprehension check sheet			
5. Feedback Sheet			

Source: Project team

**Figure 11-20 Program of Third Training Workshops**



2) Participants

The number of participants and photos are shown below. The participants were from MOC, MOT, other ministries, DOC, DOT, PMUs, lecturers of university, contractors, consultants and other enterprises.

**Table 11-5 Number of Participants of Third Training Workshops**

Date and Time	Location	No of Participants	Type of Organization and Participants no.			
November 17 (8:00-16:10)	Ha Noi Trade Union Hotel	97	Other Ministries:	2	PMUs:	12
			DOC & Other Dos:	28	MOC:	11
			Enterprises:	24	Others:	20
November 24 (8:00-16:10)	Da Nang Avatar Hotel	92	Other Ministries:	-	PMUs:	15
			DOC & Other Dos:	30	MOC:	10
			Enterprises:	19	Others:	18
November 30 (7:45-15:55)	Can Tho Ninh Kieu Riverside Hotel	81	Other Ministries:	-	PMUs:	20
			DOC & Other Dos:	33	MOC:	6
			Enterprises:	2	Others:	20
December 1 (8:00-16:10)	HCM CITY Dai Nam Hotel	97	Other Ministries:	-	PMUs:	28
			DOC & Other Dos:	17	MOC:	11
			Enterprises:	30	Others:	11

Source: Project team

Photo 11-13 : Ha Noi  
(View of the Venue)



Photo 11-14 : Da Nang  
(View of the Venue)



Photo 11-15 : Can Tho  
(View of the Registration)



Photo 11-16 : Ho Chi Minh City  
(View of Question and Answer)



3) Comprehension tests

Comprehension tests were conducted in the training workshops, similar to those in the first and second training workshops. These tests are to measure understanding level of each Output, such as quality management, safety and environment management, and cost estimation.

The result of comprehension tests in the training workshops in 2016 and 2017 shows Table 11-6. The score are up in each output compared to those in 2016. The average score was 71.8 in 2016 and 79.6 in 2017, which are higher than the figures (70) in the objectively verifiable indicators in the PDM shown in Table 1-1 of Chapter 1.

**Table 11-6 Comparison of Comprehension Test Result in 2016 and 2017**




Output	2016		2017		Difference Value (b)-(a)
	No. of Ans.	Score (a)	No. of Ans.	Score (b)	
Op 1 (Quality Management)	125	85.8	198	88.9	+ 3.1
Op 2 (Safety and Environment Management)	153	59.5	170	75.2	+ 15.7
Op 3 (Cost Estimation)	87	74.7	142	75.5	+ 0.8
Op 4 (Evaluation Method)	105	72.4	170	76.1	+ 3.7
Op 5 (Contract Management)	83	69.4	167	78.0	+8.6
Average		71.8		79.6	+7.8

Source: Project team

4) Feedback

Questionnaire survey was carried out to the participants in Ha Noi, Da Namg, Can Tho and Ho Chi Minh City. The feedback sheet is shows in Figure 11-21 and 11-22.



 <b>MINISTRY OF CONSTRUCTION</b>	Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Project		
<b>Feedback Sheet of the 3rd Training Workshop</b>			
<b>Check in the Box: ex. <input checked="" type="checkbox"/></b>			
Organization you belong	<input type="checkbox"/> 1. Ministry / State Authority <input type="checkbox"/> 2. Project owner or PMU <input type="checkbox"/> 3. Contractor <input type="checkbox"/> 4. Consultant <input type="checkbox"/> 5. Others		
Date _____ day _____ month	Location <input type="checkbox"/> 1. Ha Noi <input type="checkbox"/> 2. Da Nang <input type="checkbox"/> 3. Can Tho <input type="checkbox"/> 2. Ho Chi Minh		
Please answer Q1 to Q11 to improve the effectiveness of the Training Workshop.			
<b>Q1 Your Specialty (Multiple answer)</b>			
A1 Quality Control	A2 Safety Management	A3 Cost Estimation	A4 Not applicable
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q2 Did you attend the 1<sup>st</sup> training workshop last year?</b>			
A1 Yes	A2 No		
<input type="checkbox"/>	<input type="checkbox"/>		
<b>Q3 Level of Understanding of Guideline for Quality Supervision and Inspection for State Authorities (GLQI)</b>			
A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understand. I need explanation more detailed.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q4 Understanding of Standard Plan for Safety and Environment Management (SPSEM) and Guideline for Safety and Environmental Inspection (GLSEI)</b>			
A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understand. I need explanation more detailed.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q5 Understanding of Guideline on Cost Estimation for Construction Contractor Works (GLCE)</b>			
A1. Yes, I understood clearly.	A2. Yes, I understood somehow but I want to know more.	A3. No, I could not understand. I need explanation more detailed.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Q6 Regarding Guideline for Quality Supervision and Inspection for State Authorities (GLQI).</b>			
A1 It should be introduced	A2 More consideration is necessary before introduce.	A3 It is too early to introduce.	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Let's Move to Next Question (Q7) </b>			

Source: Project team

**Figure 11-21 Feedback Sheet (1) of Third Training Workshops**

<b>Q7 Regarding Standard Plan for Safety and Environment Management (SPSEM) and Guideline for Safety and Environmental Inspection (GLSEI)</b>		
A1 It should be introduced	A2 More consideration is necessary before introduce.	A3 It is too early to introduce.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q8 Regarding Guideline on Cost Estimation for Construction Contractor Works (GLCE)</b>		
A1 It should be introduced	A2 More consideration is necessary before introduce.	A3 It is too early to introduce.
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q9 Do you think our standard plan / guidelines help for the management of public construction to approach the international level?</b>		
A1 Agree.	A2 Agree somewhat	A3 Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q10 Since the commencement of CCQS Project, some regulations for management of public construction projects have been amended incorporating the ideas and recommendations introduced through our guidelines etc. Do you think regulations for management of public construction projects are improved?</b>		
A1 Agree.	A2 Agree somewhat	A3 Disagree
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Q11 If AMC arrange training courses for “Guideline for Quality Supervision and Inspection for State Authorities (GLQI)”, “Standard Plan for Safety and Environment Management (SPSEM) / Guideline for Safety and Environmental Inspection (GLSEI)” and “Guideline on Cost Estimation for Construction Contractor Works (GLCE)”, do you attend such training courses?</b>		
A1 Really want to attend	A2 Depend on the schedule	A3 Not interested
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Please let us know, if you have any comments:</b>		
<b>Thank you for your Cooperation</b>		

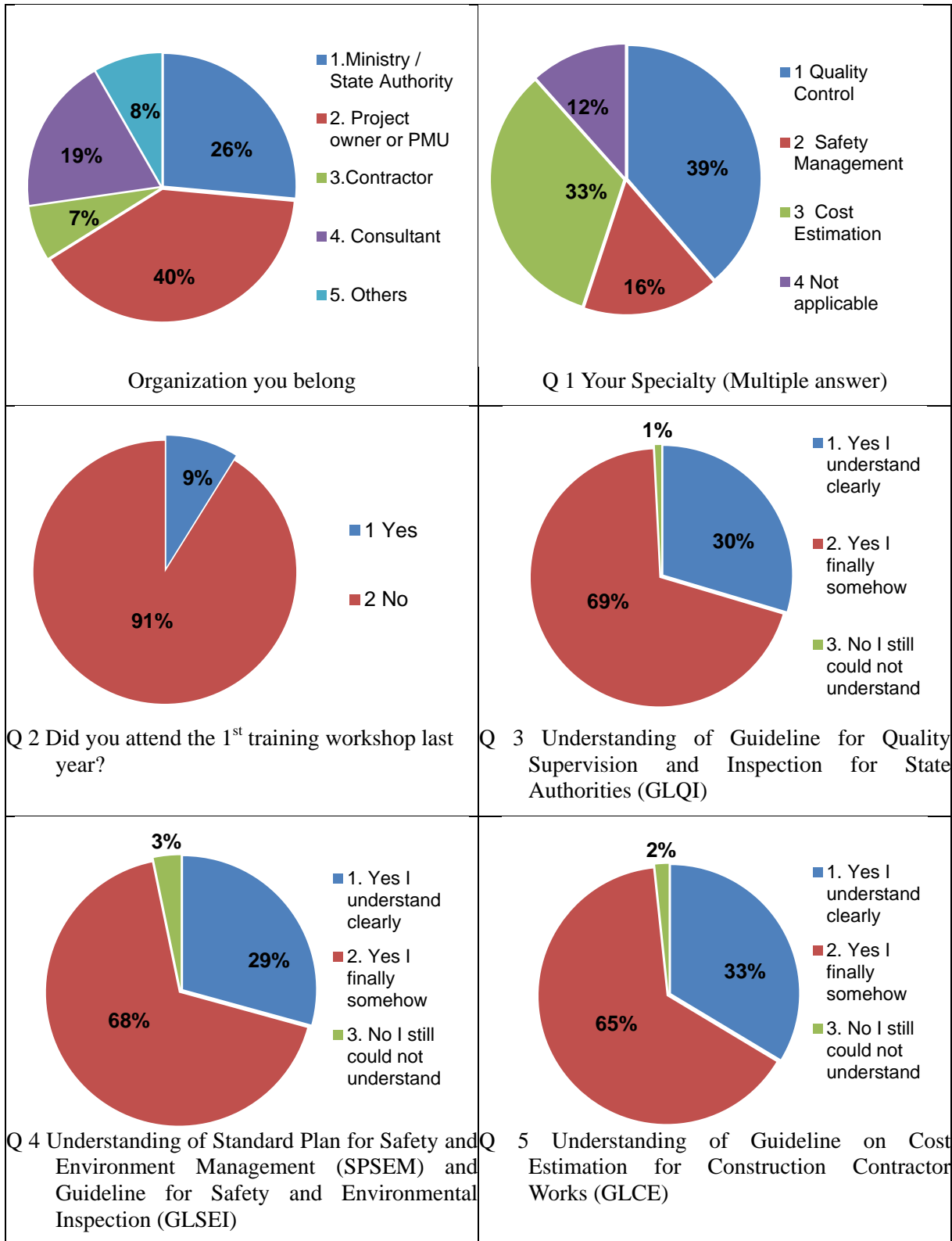
Source: Project team

**Figure 11-22 Feedback Sheet (2) of Third Training Workshops**

The results of feedback are shown in Figure 11-23 and 11-24.

- ♦ As for type of organization, participants from government were 66% (e.g. ministry /state authority: 26%, project owner or PMU: 40%), contractors were 7% and consultants were 19%.
- ♦ As for participant’s specialty (Q 1), Quality control was 39% and Safety management was 16% and Cost estimation was 33%.
- ♦ As for attend or not in 2016 (Q 2), 9% of participants attended in 2016.
- ♦ As for understanding level, among all participants, 99% (total of 1 and 2) understood for Guideline for Quality Supervision and Inspection (GLQI) (Q 3), 97% (total of 1 and 2) for Standard Plan for Safety and Environment Management (SPSEM) and Guideline for Safety

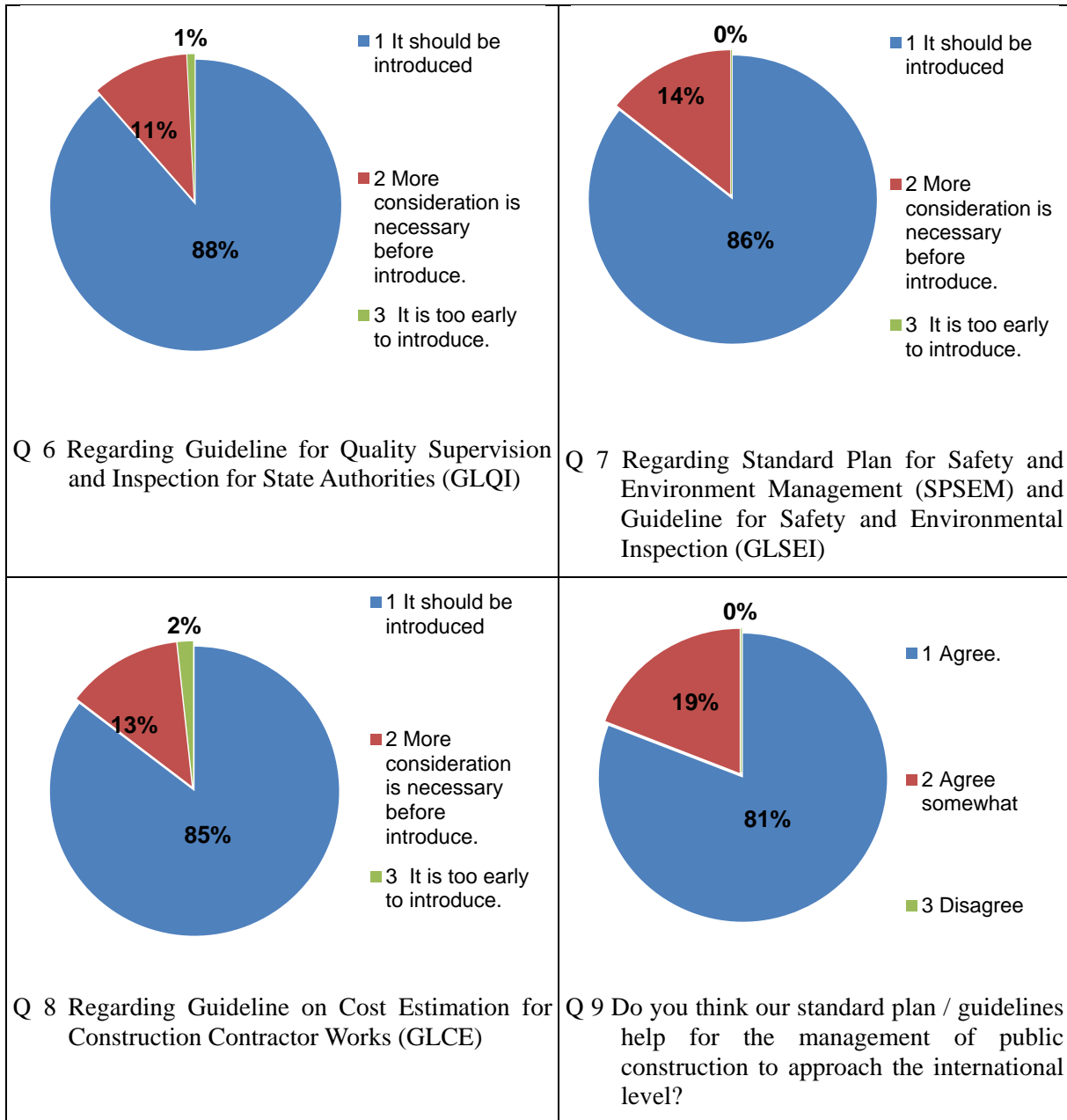
and Environmental Inspection (GLSEI) (Q 4) and 98% (total of 1 and 2) for Guideline on Cost Estimation for Construction Contractor Works (GLCE) (Q 5).

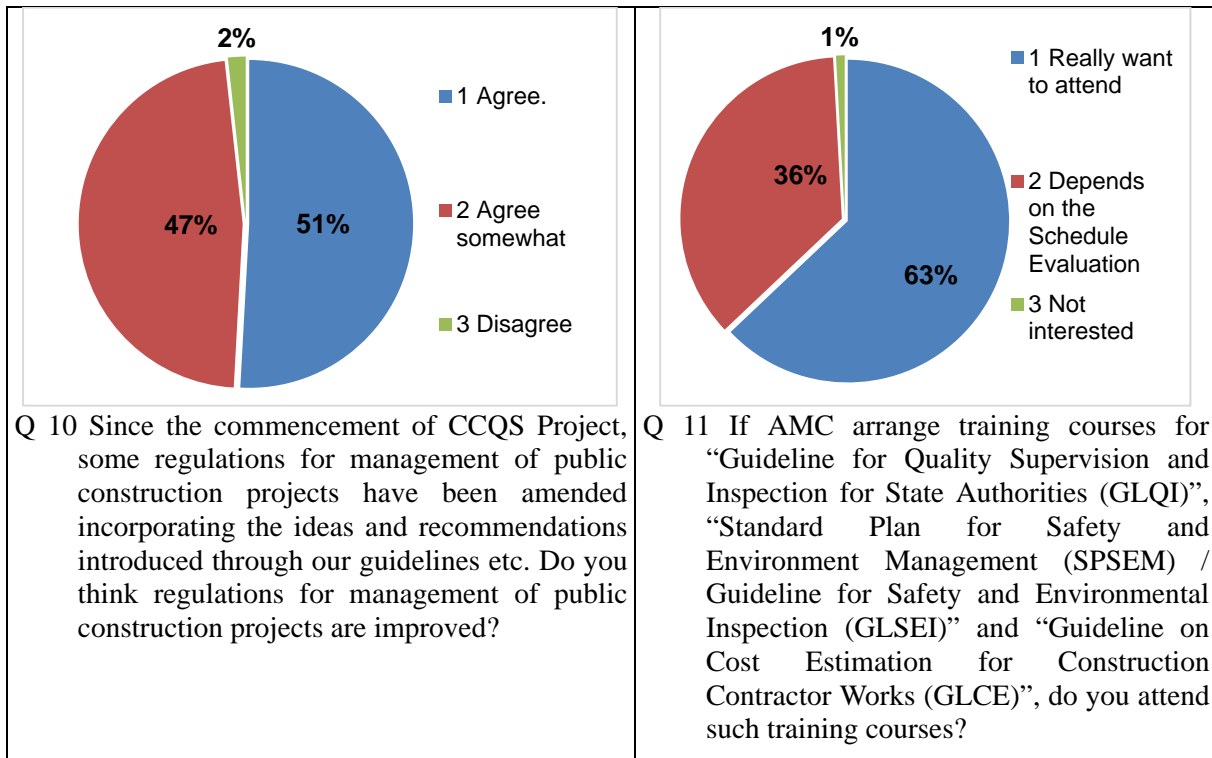


Source: Project team

**Figure 11-23 Results of Questions in Feedback Sheet of Third Training Workshops (1)**

- ♦ 88% of the participants responded to “It should be introduced” for GLQI (Q 6), 86% responded the same for SPSEI and GLSEI (Q 7), and 85% responded the same for GLCE (Q 8).
- ♦ About international level (Q 9), 81% of the participants responded to “Agree” for the management of public construction to approach the international level. This figure is higher than the figures in the objectively verifiable indicators in PDM.
- ♦ About improvement of regulations (Q 10), 51% of the participants responded to “Agree” for the regulations for management of public construction projects are improved. This figure may be one of evidences for achievement of Project Purpose in PDM.
- ♦ As for AMC training course (Q 11), more than 60% of participants were eager to attend a training course.





Source: Project team

**Figure 11-24 Results of Questions in Feedback Sheet of Third Training Workshops (2)**

#### 11.4 Recommendations and Lessons Learned

The following actions are expected and recommended to implement by ICD and AMC together with related organizations in MOC.

##### Recommendations

- ◆ From the viewpoint of sustainability, the output documents of the Project shall be incorporated into the training programs of the AMC in 2018 onward, so that those are spread to the Vietnamese side even after the Project. Also, for the purpose of further improvement of capacity of C/Ps, the Project team recommends that C/Ps of MOC shall be lecturers in the training programs.
- ◆ MOC shall set up a forum for dialogues with Construction Industries in the future. The dialogues were held only in Ha Noi in the CCQS Project, however future dialogues shall be held in Ho Chi Minh and other local cities regularly, for example once a year.

##### Lessons Learned

- ◆ Preparation for the training workshop was coordinated mainly with ICD and AMC and partly with SACQI, SACE and CAMA. Through the organizing training workshops in MOC, coordination and cooperation between the concerned departments were done in professional manner. The Project team hopes that MOC will continue to collaborate and conduct training and seminars in the future in same manner.
- ◆ From the review on the training workshops, it is desirable to have sufficient time for questions and answers. Further, as the number of participants declined to take part as time gone, it is necessary to consider how to keep number of participants (time allocation, total program time, how to attract their interests on presentation detail etc.).



## Annex 11-1

### Comments & Requests on Outputs in CCQS Project from Vietnam Construction Industry

#### **Output 1: Standard Construction Quality Management Plan is formulated with the following process**

- Review on current practice of quality management through case studies and other means
  - Formulation of standard construction quality management plan through the review above and referring international standard
  - Cost estimation on quality management, following the standard construction quality management plan
- For preparation of the above Standard Plan, the Project team would like to have your comments and requests on the following items.

#### **1) About Quality Management in Vietnam nowadays, what are the main issues in your opinion?**

#	Comment from VACC
	Regarding quality management in Viet Nam nowadays, the Government has issued a large number of regulations which are quite specific and sufficient on survey, design, construction, supervision, dossiers, etc. However, there still remains a lot of problems on quality management such as bad quality, incidents, lack of safety, etc. Therefore, the main issue is that the supervision mechanism and sanctions imposed to relevant stakeholders for their violations in quality management are not strong/strict enough. Particularly, POs and supervision consultants are the two stakeholders needed to be sanctioned strictly if they violate the regulations.
#	Comment from VECAS
	Quality management in construction works is actually the process of controlling construction process in order to ensure that it follows proper order, process, and relevant standards and codes. In Viet Nam now, the applied standards and codes are not quite different from international ones. Therefore, the main issue is on the control process by competent authorities and the compliance of contractors.
#	Comment from OCAJI
1	Lack of consciousness/awareness among all of the people involved in the construction project is the main issue.
2	Capability of the person who manages the Quality Control of the Construction Works.
3	Overall quality mindset is low especially among people working in a company in which most clients of their projects are Vietnamese companies
4	For the infrastructure in the public work projects, the awareness of people relating the quality of project is inadequate.
5	Quality control present increasingly important concerns for project management. Defects in constructed facilities can result in very large costs. Even with minor defects, re-construction may be required and facility operations impaired. Increased costs and delays are the result. In the worst case, defects may cause personal injuries or fatalities. Accidents during the construction process can similarly result in personal injuries and large costs. Indirect costs of insurance, inspection and regulation are increasing rapidly due to these increased direct costs. As with cost control, the most important decisions regarding the quality of a completed facility are made during the design and planning stages rather than during construction. It is during these preliminary stages that component configurations, material specifications and functional performance are decided. Quality control during construction consists largely of insuring conformance to these original design and planning decisions. While conformance to existing design decisions is the primary focus of quality control, there are exceptions to this rule. First, unforeseen circumstances, incorrect design decisions or changes desired by an owner in the facility function may require re-evaluation of design decisions during the course of construction. While these changes may be motivated by the concern for quality, they represent occasions for re-design with all the attendant objectives and constraints. As a second case, some designs rely upon informed and appropriate decision making during the construction process itself. For example, some underground structure construction methods make decisions about the amount of shoring required at different method based upon observation of soil conditions during the excavation process. Since such decisions are based on better information concerning actual site conditions, the facility design may be more cost effective as a result. With the attention to conformance as the measure of quality during the construction process, the specification of quality requirements in the design and contract documentation becomes extremely important. Quality requirements should be clear and verifiable, so that all parties in the project can understand the requirements for conformance. Much of the discussion relates to the development and the implications of different quality requirements for construction as well as the issues associated with insuring conformance.
6	Main issues: Quality of some construction project have been degraded after some year from taking-over. It means quality management work was not good during construction period.
7	The Quality Management in Vietnam: The importance of quality management has not been acknowledged yet.
8	Quality management methods do not differ much between works in Vietnam and other international works. But, some of quality control tests are found simplified and irresponsible here and there by local style interpretation. It was doubtful whether the test was being conducted really in some of the materials tests in public institution.

#### **2) Do you think there are gaps between Vietnam's Quality Management Standards and International Standards? If there are gaps and differences, please specify.**

#	Comment from VACC
	N/A



# Comment from VECAS	
	As above explanation, I think there isn't a big gap between Vietnam's Quality Management Standards and International Standards. The main issue here is the implementation method and compliance (to the standards) by relevant stakeholders.
# Comment from OCAJI	
1	No comment.
2	We understand Vietnam standard may be established based on several international standard with adjusting typical condition in Vietnam. Therefore there may not be large difference between them.
3	Generally Vietnamese standards require less than international standards, for example, sand in concrete. One reason is it's difficult to achieve international standard with locally available resources, so it is not just to raise up only standards, but capacity has to be raised up as well to achieve higher standards.
4	There is no gap, Vietnam's Quality Management Standards is same as those of International Standards
5	<p>The ISO 9000 family addresses various aspects of quality management and contains best known standards. The standards provide guidance and tools for companies and organizations who want to ensure that their products and services consistently meet customer's requirements, and that quality is consistently improved. ISO 9001 sets out the criteria for a quality management system and it can be used by any organization regardless of its field of activity. In fact, there are over one million companies and organizations in over 170 countries certified to ISO 9001.</p> <p>The standard is based on a number of quality management principles including a customer focus, the motivation and implication of top management, the process approach and continual improvement. Using ISO 9001 helps ensure that customers get consistent, good quality products.</p> <p>Whether we're new to ISO 9001 or looking to take expertise further, ISO 9001 can be designed complexity of getting us where we want to be – whatever our starting point.</p> <p>Whether the organizations think there is a gap or not, it is subject to the management board or quality control personnel what they are looking for, the standard management system shall be implemented to get continual improvement and good quality products, below mentioned :</p> <ul style="list-style-type: none"> <li>- Better quality management to meet customer needs</li> <li>- More efficient ways of working, save time, money and resources</li> <li>- Improved operational performance, cut errors and increase profits</li> <li>- Motivate and engage staff with more efficient internal processes</li> <li>- Win more high value customers with better customer service</li> <li>- Broaden business opportunities by demonstrating compliance</li> </ul>
6	There are some gaps and differences between Vietnam's Quality Management Standards and International Standards. Some TCVN does not mention clearly or does not have technical requirement for each work item or each construction work for quality management
7	There are gaps between Vietnam's Quality Management Standards and International Standards: Firstly there seems to be a gap for sense of value. Specifically speaking, this is an example, when the straight drainage installation is required, in international common sense, it shall be straight, however in Vietnam, unless the tolerance is specified, straightness is never cared
8	Inspections at each stage of the work are advanced while the scope of responsibility between consultant and contractor remains vague. Verbal instructions that do not entail responsibility are often given by consultant. On the other hand there is a lack of cognizance of quality management obligations on the part of contractor too.

**3) Do you have any ideas to improve Quality Management in Vietnam? If you have, please specify.**

# Comment from VACC	
	As mentioned in Question 1, it's necessary to have strict sanctions to control supervision consultants and POs' responsibilities. If these two stakeholders well perform their responsibilities and roles, the quality of construction works will be enhanced. And in order to realize this idea, it's necessary to consider the cost for supervision. The cost for supervision and the calculation of supervision cost based on percentage as current practice is backward and not suitable.
# Comment from VECAS	
	In my opinion, both management authorities and contractors should focus on the strict compliance to proper process, standards and codes. Additionally, it's important to improve self-responsibilities by Contractors as well as apply regime of awards or sanctions when necessary.
# Comment from OCAJI	
1	Need to improve the above 1).
2	Only well knowledge and experienced engineer on specific technology should be assigned as the Inspector who will manage the Quality Inspection.
3	Copying quality management is easy, but implementation is difficult unless they fully understand the reason for the necessity to achieve higher standards.
4	Recognition to deal with as a product is necessary
5	The answer is same as question no. 2).
6	Need to follow first foreign standards and update according to Vietnamese application



7	To improve the Quality Management Standards: It is considered that quality depends on contractor's policy or education and strictly inspection by the Engineer. Each party must study and acknowledge the importance of quality.
8	It is important that quality management standards are made clear prior to proceeding with the work to rigorously manage subcontractors from the beginning in terms of quality.

**4) There are many issues in current Quality Management expenses in Vietnam. To improvise these issues, do you have any ideas? Please specify.**

<b># Comment from VACC</b>	
	As mentioned in Question 1, it's necessary to have strict sanctions to control supervision consultants and POs' responsibilities. If these two stakeholders well perform their responsibilities and roles, the quality of construction works will be enhanced. And in order to realize this idea, it's necessary to consider the cost for supervision. The cost for supervision and the calculation of supervision cost based on percentage as current practice is backward and not suitable. (same with Question 3)
<b># Comment from VECAS</b>	
	This question is not quite clear. However, in order to ensure quality management, it's necessary to follow proper processes, fully equip with essential equipment in order to monitor construction process and control quality. It's also necessary to arrange sufficient budget for personnel working on quality control to ensure their hardworking. In my opinion, in order to improve the role as well as the compliance with regulations on quality management by relevant stakeholders, the expense for quality management must be calculated accurately and adequately; and it's necessary to have a clear regime of awards and punishments.
<b># Comment from OCAJI</b>	
1	Need to raise up Manufacturer's/Supplier's levels of quality control. It will lead to improve expenses.
2	In order to improve the quality for it, Independent inspector from abroad can be dispatched to Vietnam domestic project for studying.
3	Clients have to understand higher quality comes with additional costs
4	None
5	Not familiar on this issue.
6	Quality Management expenses are appreciable. We need clarify this expenses to control quality of construction better. To improvise these issues: During bidding period, should add to expense of project.
7	To improvise the issues in current Quality Management expenses in Vietnam: We have an ideal of cost which related to administration documents should be minimized, instead of that QA/QC work should be concentrated more.
8	We know some cases that the work carried out by local contractor passed inspections despite it did not meet the specified quality requirements, and caused problems or troubles thereafter.

**5) Please specify any problems in Quality Management that you have experienced.**

<b># Comment from VACC</b>	
	N/A
<b># Comment from VECAS</b>	
	I think that the expense for quality management for projects funded with State budget is not appropriate and needs to be improved. Additionally, it's necessary to raise awareness and improve self-responsibility of each group and individual who participate in quality management process.
<b># Comment from OCAJI</b>	
1	Hard to implement due to the above 1).
2	Some of Inspector or quality manager of the client do not know what subject is treated as the high priority from the view points of technical issue.
3	Level of quality standards is very low. I assume less education regarding quality. Sometimes management and/or clients have priority in low costs than quality, so contractor has to reduce quality.
4	Finishing works aren't carried out in good manner or not in compliance with technical requirements
5	Due to the market nature of construction industry, main contractor shall have good quality management standards to the Customer needs, as well as sub-contractors shall perform the same. The implementation of Main Contractor's standard construction management plan shall be delivered to all sub-contractors through our site organization effectively, to achieve in a short time with minimum training. Effectiveness and continuous enhancement of good quality management process for different sub-contractors and different project to be solved.
6	Some problems in Quality Management that you have experienced: We have to test again for all material from factory although Factory already issued quality approved Mill Certificate. If we can control or ensure quality of Mill Certificate, we can reduce Quality Management expenses.
7	It is said that the good result or certificate of quality can be obtained by black way. If this is true, improvement of quality management is not easy. There is no penalty for insufficient quality, strictly penalty should be applied and inspected by an independent authority.
8	Motivation for securing quality by establishing such a system that contractor who gave rise to quality troubles is eliminated from tendering thereafter within certain period of time.

**Output 2: Standard Construction Safety Management Plan is formulated with the following process**

- Review on current practice of safety management through case studies and other means
- Formulation of standard construction safety management plan through the review above and referring international standard
- Cost estimation on safety management, following the standard construction quality management plan

For preparation of the above Standard Plan, the Project team would like to have your comments and requests on the following items.

**1) Do you think there is difference in safety measures between Vietnamese practice and international standards? If any, please give us your experience.**

#	<b>Comment from VACC</b>
	N/A
#	<b>Comment from VECAS</b>
	In my opinion, regulations, contents and forms of construction safety assurance of Viet Nam are prepared with reference to other countries in the region. However, it's necessary to confirm that the strictness and compliance to safety regulations of stakeholders participating in construction process is a big issue. Furthermore, it's also necessary to review the quality and standard of protective and safety equipment which are used at construction works now.
#	<b>Comment from OCAJI</b>
1	Same as the above Output 1, 1). To lead workers to follow rules is extremely difficult.
2	There is not big difference on requirement, regulation and standards on specification. However, the mind of the engineer and worker who manage the safety works seems be insufficient.
3	Yes, big difference. For example, no helmets / gloves / boots / safety clothes / Accident prevention measures.
4	Yes, there is difference. From education, Vietnamese people should be equipped well with the knowledge, awareness and their responsibility in keeping and obeying the safety measures.
5	It is the mandatory policy of the all Employers and Government body who may concern to accomplish construction work safely, efficiently and with due regard to the environment. Safety considerations must be given priority in both design and construction. During the planning and design stage, considerations should be given to alternative engineering solutions and/or incorporate safety measures to eliminate and/or reduce the risks encountered by those during construction and subsequent inspection and maintenance activities. It is not matter of area/country to aim at zero fatal accidents.
6	Actually, there is no difference on safety assurance methods between Vietnamese and international standards.
7	Safety measures between Vietnamese practice and international standards is quite different. In Vietnam, there is a conservative thinking that injury or death on the site belongs to himself. That is why, he cares only himself with no caring of others. Safety skill are basically not trained carefully for all workers. On site, the worker are always to be warned by some slogan such as "Safety first"...however, among of them not so many workers was trained how to work safety or avoid any potential dangers. The safety official is not registered in local projects as well so that many projects in which the safety cost measurement is not considered in the tender price.
8	Safety management methods differ much in Japan and Vietnam. But it appears there is no significant difference between works in Vietnam and other international works. Different from Japan, because the scope of responsibility is not legally rigidly defined, it is necessary to make arrangement in detail beforehand between prime contractor and subcontractor(s) as to which extent, on whose responsibility and at whose cost is safety equipment provided. In Vietnam, responsibility and position of a safety manager are low as well as recognition thereof is insufficient or loose. As such, safety management plan formulated beforehand is a put-up job and does not continue in many cases.

**2) Based on your experience on monitoring of near miss and accidents in Vietnam, what type of works or what prevention measures should be included in the Safety Management Plan?**

#	<b>Comment from VACC</b>
	In our opinion, all works and prevention measures should be included in the Safety Management Plan. It's because sufficient attention hasn't been paid to safety management in construction in Viet Nam. There hasn't been specialized agency on safety management from State authorities; and mechanism and politics on this matter are quite general; the dealing with safety loss is carried out for each separate case, etc. Therefore, the lack of safety in construction is still occurring and becoming more and more serious. And the cost for safety management (labor protection, protection equipment, etc.) – an important factor to carry out construction methods safely - hasn't been paid sufficient attention by State authorities. In construction cost estimates, there is no cost item for safety. And when prepare proposals for bidding, contractors usually try to make their price as low as possible to win the contract by reducing the cost for safety. And in case the contractors contract out their works to subcontractors, they themselves reduce the cost for safety, leading to the fact that subcontractors don't pay sufficient attention to safety management. Hence, it's recommended to revise current cost estimate structure of MOC and to work out suitable

	<p>policies on costs in order to ensure labor safety. We will have specific recommendation on this matter in a separate working session.</p>
#	<b>Comment from VECAS</b>
	<p>I have not experienced any near miss or accidents. However, in my opinion, safety regulations/rules must be followed every time, everywhere and by everybody. The neglect is not allowed at any phase, even the least important phase, because it may cause problem to other phase. Therefore, safety rules (for human, machinery, equipment, property, construction work, etc.) must be strictly followed.</p>
#	<b>Comment from OCAJI</b>
1	Need to improve worker's awareness and care of safety.
2	It may be impossible to avoid the human error. Therefore, the regulation of arrangement of safety prevention system shall be treated more strictly as same as international regulation. This cost on the Project is not so small. Therefore, the client shall permit to add this safety cost on Contract Price and evaluate the safety condition strictly during construction period.
3	Safety is always in construction sites and very difficult to specify everything. First of all, safety awareness program to share ideas among members why they need it and how they achieve it should be initiated by just copying international standards.
4	The construction method shall be well prepared which covers the accident prevention measures. So the construction method is in relation with Safety Management Plan
5	<p>Employees may not realize they are expected to report near misses—no matter how trivial they may seem. Although there may not have been a serious outcome, these incidents could result in future accidents. By recognizing near misses and taking action to correct the underlying problems, employees will not only reduce the number of near misses, but more importantly, they will reduce the number of actual accidents in the future.</p> <p>"Near misses" can be defined as minor accidents or close calls that have the potential for property loss or injury in any kind of work in any occasions. A near miss will prevent a task from being completed as planned. Most accidents can be predicted by close calls. These are accidents that almost happened or possibly did happen but simply didn't result in an injury this time around.</p> <p>It is the one of the efficient way to reduce and abstract the near miss is "Don't walk-by" policy and put suggestion box on construction site with incentive scheme to the employees for ease squeal.</p>
6	<p>Types of safety works and preventive measures to be included in the safety management plan</p> <ul style="list-style-type: none"> <li>- Types of safety works: <ul style="list-style-type: none"> <li>• Education and Training</li> </ul> </li> <li>- Preventive measures: <ul style="list-style-type: none"> <li>• Obtaining Work Permit;</li> <li>• Preparing Working Plan;</li> <li>• Preparing list of prediction of potential hazards likely generated from the job to be performed and rectification measures;</li> <li>• Making assignment of person-in-charge;</li> <li>• Preparing periodic summary and inspection all kind of equipment and plants and number of workers on site;</li> <li>• Conducting weekly and monthly safety patrol, preparing report including rectification measure results.</li> </ul> </li> </ul>
7	Prevention measures should be included in the Safety Management Plan. My one experience was worker's falling down from high place but only injured. It shall be considered that only instruction is not so effective, good safety facilities must be installed as their obligation, and education for safety shall be provided also.
8	In Vietnam, such thought that an accident is treated on one's own responsibility in a sense is spread. There are cases that an accident occurred in the work carried out by local contractor is not made public. Wouldn't dealing with accidents in such a way develop into a process of improvement?

**3) Do you secure the enough number of certified/qualified safety officers for your construction project? Do they have enough capacity to handle the safety management at the construction site?**

#	<b>Comment from VACC</b>
	<p>We don't have enough, even no certified/qualified safety officers. It's the reason why the lack of safety has continuously happened and it becomes more serious.</p>
#	<b>Comment from VECAS</b>
	<p>It's difficult to define whether we secure enough or not number of certified safety officers. In my opinion, safety assurance depends much on the compliance (to safety rules) of each individual working at site at every phase, everywhere, and every time. When the awareness (on safety) of all relevant people is good, the management is just a formality, for general rules. And in that case, we don't need so many safety officers.</p> <p>Conversely, if the awareness on safety of each individual working at site is low, the control (by safety officers) may cause the sense of dealing with safety officers from these individuals. For example, when safety officers are at scene, the individuals will follow the rules, but they will ignore the rules when safety officers are not there. In later case, we will need a large number of safety officers for safety assurance.</p>

	<p>Therefore, in order to ensure safety assurance, we need to improve awareness and compliance (to safety rules) of relevant people. It's the reason why Japanese safety officers are arranged under alternate shifts, and all of them are able to undertake the same job.</p> <p>Safety officers need to have expertise. However, we need to consider whether it's necessary for them to obtain certificates or not. In my opinion, after having completed professional training program on safety as prescribed, safety officers don't need to obtain any (compulsory) certificate to become safety managers. They should be encouraged to participate in training course to improve their knowledge, but not for certificates / qualifications because in some cases, this is done only for formality. It's necessary to focus on expertise and organize regular examination and test to have actual evaluation.</p>
	<b># Comment from OCAJI</b>
1	Yes, but capacity-wise, safety officers should have more knowledge and experience of construction methodology.
2	Yes it is. We assigned Japanese engineer who has long experience on construction site management and has well knowledge the design and election plan of the Bridge as Safety Officer. In addition, we handed over the right to stop the construction work when he and his site safety members find out the unsafety condition and works until improving it as his satisfy level. This is the Company Rule.
3	We don't have enough human resources for safety personnel
4	Yes, I do. Safety officers must have the safety management licenses. Yes, surely they have enough capacity to handle the safety management at the construction site.
5	It is depend on the site activities are how complex and client needs. In normal circumstances, for the normal operation to adopting safe system of work, it shall work as a team instead of just rely on safety personnel.
6	We are sure all of our safety staff and officers hold appropriate professional certificates and are qualified enough to deal with the assignment.
7	We assigned many safety officers however since the position of safety officer is not so high and workers never understand the importance of safety, they never follow him. They follow Japanese manager's instruction only.
8	In our opinion, provision of safety equipment only cannot prevent an accident. Education and qualification system to workers are therefore necessary. Obligating work by qualified workers and trainees and reflecting costs incurred thereby onto cost estimation for tender would produce a benefit of good circulation.

**4) Do you think awareness and knowledge of workers on safety is good enough to implement the safety measures? Please provide us your idea how to conduct safety education and training.**

	<b># Comment from VACC</b>
	<p>I don't think so. In construction works in Viet Nam, 60-70% of workers are farmers who involve in construction works only when they are free after harvest. Without being trained in any specialized schools/classes on safety management, they are not only bad in term of working skills but also have little or even no knowledge on safety.</p> <p>In our opinion, the workers who involve in construction works, depending on each type of work (on high level, in deep water, dangerous works, etc.) shall obtain safety certificates issued by competent authorities showing that they have attended relevant training courses or certificates issued by Safety Division of enterprises. It's also necessary to have suitable regulations/mechanism on this matter (for example: stipulating that construction companies have to register for "Companies ensuring labor safety" every year, etc.) and apply strict sanctions to companies with safety loss during construction.</p>
	<b># Comment from VECAS</b>
	<p>Safety work completely depends on the consciousness and compliance of relevant people at every phase. I can say that the awareness on safety for labors, equipment, machinery, and work of Vietnamese workers is not good. Therefore, it's necessary to focus on training on safety rules and safety assurance measures for site managers and workers. Through the training course in Japan that I attended, I see that the training on safety is carried out every day. Safety officers are arranged on alternate shifts. Workers always follow safety rules and measures. Meetings on safety are organized every month in order to summarize the situation and for lessons learnt. Every month, MLIT will summarize accidents happening at construction sites nationwide. Awards will be given and scores will be added for the contractors who have safety assured at sites, etc. Those are methods of education and encouragement for safety assurance.</p>
	<b># Comment from OCAJI</b>
1	Not good enough. Need to keep educating the workers repeatedly.
2	At the time of bidding stage, we calculated this safety management cost including in Indirect cost or over head of Bidding Price. Because the specification of our project was regulated based on international technical standards.
3	Not enough safety awareness. Government should be more determined for strict implementation as well as understanding it will come with costs.
4	Safety meeting with workers at site is very important
5	Employees can contribute substantially to achieving the goals of safety and health, but only if they have an



	awareness of recognized safety standards, and the ability to identify unsafe and unhealthy situations. Therefore, we believe that the education and training of each employee is a primary factor in achieving a safe and secure workplace. However, such education and training should also enable employees to identify mechanisms to eliminate identified hazards. With such knowledge and information also comes the ability to interact with management and Safety Committee at each construction site.
6	Knowledge and awareness on safety matter of the Vietnamese workers are under standard to perform thoroughly safety measures In order the safety works to be well performed on construction site, basically, it is required: - Workers have good education, especially discipline practices; - The employer have good thinking of safety works and fully respect safety practices and regulations in construction works regulated by the Government
7	In Japan, there are some authorities to check the safety on site and if safety works are not enough, they can stop the site. However in Vietnam, there is nothing like that. It is quite difficult to improve with no penalty.
8	A breach of prime contractor's obligations under the contact shall be subject to penalty or taking off points, and contractor with less than certain minimum points is not given qualification for tendering.

5) **Cost for Safety Management: Based on your experience, is the cost for safety management in the contract sufficient to implement the safety management plan? If not sufficient, do you think what item/ activity/ measures are difficult to implement?**

#	<b>Comment from VACC</b>
	Please refer to answer for Question 2.
#	<b>Comment from VECAS</b>
	It's quite difficult to confirm whether the cost for safety management in the contract sufficient or not to implement safety management plan because construction projects in Viet Nam now are applying the cost norm system of Viet Nam. It's necessary for competent authorities on safety to review the regulations on safety and safety assurance measures for human, machinery, equipment, work, environment, hygiene, and community health, etc. All measures must be specified in safety rules and compulsory to follow for all relevant stakeholders with strict control. In case of violation, sanctions should be imposed. And the expense for safety management and assurance must be calculated accurately and adequately. The expense to improve the awareness on safety of relevant people at site should also be incorporated in official rules; and cost norm for this expense should be issued. In my opinion, safety assurance will be carried out properly if sufficient budget is arranged for it and relevant people have right awareness on this matter. It's necessary to determine that safety should be assured for lives of everyone participating in construction sites, for property, work, and whole community where the work locates.
#	<b>Comment from OCAJI</b>
1	Not sufficient. Need to increase the number of safety-in-charge staff.
2	Yes, costs for safety is necessary in the contract because otherwise most unsafe and cheap contractors win a project and even contractors with safety mind has to cut costs for safety to win a project
3	Yes, costs for safety is necessary in the contract because otherwise most unsafe and cheap contractors win a project and even contractors with safety mind has to cut costs for safety to win a project.
4	Safety expense should be added to the contract price by percentage above contract price.
5	Cost for Safety Management: Based on your experience, is the cost for safety management in the contract sufficient to implement the safety management plan? If not sufficient, do you think what item/ activity/ measures are difficult to implement? It is sufficient, so far.
6	Management costs of safety works must meet actual requirements of the project and cannot say more or less.
7	Not sufficient because any safety works are included in each construction items. It is too difficult to understand clearly what we should do. The following is one opinion; I think it shall be as one item in the contract and in bidding documents also and shall be fixed as lump-sum amount. After bidding, contractor shall submit contents or breakdown of safety works within this lump-sum amount. Then contractor shall do following his submission. The Engineer also can check it clearly referring to contractor's submission and if not sufficient, the Engineer can stop the site because he can say that in spite of contract item, the contractor's performance is not so sufficient. When the Engineer accepts contractor's safety works enough, the contractor can claim this safety item properly.
8	Costs for provision of safety must be properly reflected on construction cost.

**Output 3: Cost Estimation Guideline for Indirect Construction Contractor Works is formulated with the following process**

- Review on current cost estimation system in Vietnam and comparison with cost estimation system in Japan
- Formulation of cost estimation guideline for indirect construction contractor works, following the review the above and cost estimation on quality and safety management carried out in Output 1 and 2

For preparation of the above Cost Estimation Guideline, the Project team would like to have your comments and requests on the following items.

**1) Do you have any comments in general regarding existing cost estimation system for public projects such as problem or dissatisfaction? If you have, what are the contents?**

<b># Comment from VACC</b>	
1	It's necessary to renovate existing cost estimation mechanism. The formulation and management mechanism of cost has basically changed in accordance with market mechanism (Decree 112 and 32) but the revision of contents guiding the cost formulation is still slow. The current guidance which is "fixed/rigid" as current practice makes cost estimate not flexible and not reflecting separate characteristics of each region/area. In other words, current cost estimation system does not reflect market characteristics that affects bidding price. It's necessary to study the structure of cost items (avoid the case when cost items are rearranged as a formality without any change in term of nature). Contents of current cost items haven't reflected characteristics of the market and the region. Risks haven't been mentioned in construction price. It's also necessary to review entire labor norm system in construction to make it suitable with salary mechanism, with the market and Construction Law.
<b># Comment from VECAS</b>	
1	In my opinion, cost norm and cost estimation should be regularly updated in order to ensure sufficient expenses for projects. The updating of unit price when preparing cost estimation is quite important because it's the basis to approve and implement projects. Currently, many projects face the problem that expenses arise during implementation and it's due to outdated unit price system. Therefore, it's necessary to review the cost norm for labors, machine shift in order to ensure the suitability with the change of salary regime.
<b># Comment from OCAJI</b>	
1	Contactors' overhead and profit are not suitable for the foreign Contactors.
2	The Safety and Quality are to be most respective subject in construction project. From the view points of this issue, overhead ratio in cost estimation system in Vietnam seems quite low. The ratio of overhead shall be reviewed by refereeing the system of abroad.
3	I am not familiar with cost estimation system in Vietnam because it is not available in English.
4	No comment
5	No comments cause such system is not basically adopted.
6	Cost estimation in Vietnam is updated slower than the actual changed rate in the market. This results in construction costs to be prepared following too high rates for some of the work items, and also too low for the others. In construction industry, application of new material and new method of construction is always taken place while this is not stated in the construction norms. In addition to this, other aspects of weather conditions, terrain, construction site etc. are not taken into consideration in the norms establishment.
7	- There are a lot of Vietnamese Contractor using the "Book name as Dinh Muc" for cost estimation - That book is also used by some Authorities in order to check the price of tender as well as checking the implementation during construction. This kind of book in some case is making unsuitable/unreasonable estimation if compare with actual condition
8	Compared with cost estimation in Japan, there is a large difference between the Government cost estimation system and prevailing market prices (rates), although they depend on the type of work. At present, various new civil engineering technologies and construction materials have come to be adopted in Vietnam too, but it is doubtful whether the Government cost estimation system has properly responded to such technologies and materials.

**2) Do you use cost estimation system issued by government when you prepare the bid price? Otherwise your own method?**

<b># Comment from VACC</b>	
1	Currently, all Stated funded packages/projects still use cost estimation system issued by Government when preparing the bid price (According to the Tendering Law, it's not compulsory; but in actual situation, Requests for Proposals still request to prepare in detail in accordance with Government's guidance). The Non-State funded projects use their own method.
<b># Comment from VECAS</b>	
1	Most of public projects use cost estimation system issued by Government; and I myself don't know any other system. The application of other systems in many cases is quite difficult because there is not enough basis for competent authorities to approve.

# Comment from OCAJI	
1	Our own method is used for more accurate cost estimation.
2	Both method will be applied to make the bidding price.
3	We use our own cost estimation method
4	We don't use cost system by government. We use our own method
5	We do not use the said system so far, but quotations from subcontractors and our own method.
6	Regarding to preparation of bid price, construction norms regulated by Vietnamese Government and unit rates of materials, plants and equipment, manpower, labor are accounted/updated as per current market prices.
7	We are not using the cost estimation system issued by government
8	Since it is difficult to win a contract using the Government cost estimation system, we have adopted market prices (rates) in tender cost estimation.

**3) Which do you have the most estrangement from contract price among direct cost items, indirect cost items (expense ratio) and overhead? If you have, how much the difference?**

# Comment from VACC	
	It's quite difficult to give answer for this question because Contract price is the winning price which is reduced for winning the contract.
# Comment from VECAS	
	In my opinion, current overhead is not appropriate because lots of business expenses are not yet included. It's necessary to adjust this cost by adding the cost for office space rental, application of IT with copyright, insurance, etc. and other reasonable costs which are needed for managing, operating, and implementing projects by Contractors.
# Comment from OCAJI	
1	Overhead and profit are different by 10 to 20 %.
2	Indirect Cost and Overhead Cost.
3	Overhead cost is different for Vietnamese companies and international companies because price level is different
4	None
5	Nothing particular
6	As per Vietnamese regulations, mobilization cost which is accounted for 1% of total direct costs is not suitable. This cost depends on a lot of factors such as location, construction site and progress etc. which really need to be included in calculation.
7	I have no comments to make in this respect.
8	As for the work without cost estimation standard, our opinion is that costs for temporary works and safety should not be estimated on a pro-rata basis, but on a piling-up basis.

**4) Do you think your estimation cost matches the cost in contract in indirect cost items? If not, how do you cope with the situation?**

# Comment from VACC	
	Same with answer for Q.3
# Comment from VECAS	
	In my opinion, the concept of indirect cost is not quite clear in the cost for construction works. However, any kind of cost must be determined according to cost estimation and unit price; and for cost items which are difficult to be determined based on unit price, lump sum type will be applied. In general, unit price and cost norm shall be applied for all items when preparing cost estimation. It's necessary to have an agency which is in charge of issuing unified cost norms nationwide with the application of coefficient for regions (remote area, island area, area with difficulties, etc.). This is necessity for public projects when applying unit prices and cost norms issued by the Government. It's also necessary to enhance the role of Contract which should be considered the highest legal basis to perform powers and responsibilities among relevant parties. Therefore, the contents and numbers specified in the Contract must be clear and coherent.
# Comment from OCAJI	
1	At the time when the Variation Order is issued, such overhead and profit will be a problem. Need to negotiate with the Employer.
2	We understand that existing cost estimation system shall be reviewed especially, site management cost (Indirect cost) and overhead ratio.
3	I am not familiar with cost estimation system, so refrain from making comments
4	There are differences between costs in our cost estimation and those in the contract price case by case.
5	It differs depending on contracts. In case that estimated cost does not match the cost in contract in indirect cost items, there will be some adjustment to be made in profit ratio, etc.
6	Indirect costs, as per estimated, is suitable for establish bid price, however, it should be recalculated during construction process. Therefore, such indirect costs should be subject to provisional sum.

7	I have no comments to make in this respect.
8	It is considered necessary to establish a system that reasonable provisional sum is given and change in work with less hindrance to the progress of work is accepted.

5) Do you think existing cost estimation system should be revised? If yes, what parts should be changed?

<b># Comment from VACC</b>	
	Please refer to answer for Q.1.
<b># Comment from VECAS</b>	
	If the estimation of cost is accurate and realistic, it will help relevant parties to mitigate arising costs during implementation. In my opinion, the cost norm for construction work now is not quite problematic, but the one for overhead needs certain standards. So far, we haven't got standard norms for items of overhead leading to the deficit for some parts and surplus for others. It's necessary to change the perception on value and components of wages paid monthly, daily, hourly, etc. in order to prepare realistic cost estimation for these items in accordance with international practices. When preparing cost estimation, it's necessary to stick to relevant categories of costs to ensure proper and adequate calculation, assuring the rights of Contractors. Additionally, the control of cost must be carried out strictly; and strict sanctions should be imposed to cases of violations by management level and lower level to ensure the integrity and efficiency of projects.
<b># Comment from OCAJI</b>	
1	Overhead and profit should be incorporated with the foreign Contractors' ones.
2	No comment
3	I am not familiar with cost estimation system, so refrain from making comments
4	We're not sure the existing cost system in Vietnam
5	No comments cause such system is not basically adopted.
6	Existing cost establishment system should be revised to catch up with construction works development. Items regulating on new construction materials and method should be included.
7	It can be kept, however no need to publish legally, this kind of system should be for reference only. So that, the estimation will be applied or not applied depend on the Contractor.
8	No comment



**Output 4: Evaluation Method on Engineering Capacity on Contractors, Construction Contractor Grading System & Construction Contractor Selection Mechanism is developed and Regulation on Qualification of PMU is improved with the following process**

- Current evaluation method on engineering capacity on contractors etc. to review
- Evaluation method on engineering capacity on contractors to develop
- Draft of contractor grading system & construction contractor selection mechanism to prepare
- Regulation on qualification of PMU to improve

For preparation of the above (evaluation method on engineering capacity on contractors etc. and PMU qualification), the Project team would like to have your comments and requests on the following items.

**1) New engineers qualification system (3 classes & examination), construction contractors registration system (obligation of registration) and construction contractors grading system (3 classes) were introduced in the latest construction law system. Please state your opinions about these changes?**

<b>#</b>	<b>Comment from VACC</b>
	<p>It's necessary to apply construction contractors registration system and grading system. However, in our opinion, the Party and Government are trying to develop a market oriented economy, but Construction Law and Tendering Law have issued some regulations stipulating some jobs to be carried out by State authorities while they should have been handled by professional associations. This shows the lack of renovation. These regulations lead to the necessity of increasing human resources for State authorities – an unnecessary thing. We think that these activities (engineer qualification system, construction contractor registration system, grading system) should be carried out by professional associations like the current practice of other regional and international countries. For this matter, VACC had a working session and sent official correspondence to Vice Prime Minister Hoang Trung Hai, Public Petitions Committee of Parliament, Viet Nam Chamber of Commerce and Industry (VCCI) for official recommendation to the Government and Parliament.</p>
<b>#</b>	<b>Comment from VECAS</b>
	<p>In my opinion, this change is completely in line with the development trend of Viet Nam's construction industry and international practices.</p> <p>The ranking of engineers from low to high class requires engineers to continuously study and improve their professional capacity in order to undertake the task required by higher grade of construction works. The ranking and rank upgrading through examinations will increase the authenticity of engineers. However, the matter is how to organize examinations, how to control and manage content of examination (issues to be raised in interview sessions, questionnaires) in order to avoid fraud in the examination and exactly reflect candidates' qualification.</p> <p>In my opinion, an examination should be divided into 2 two sessions which are interview and writing test. Each session should be divided into two parts:</p> <ul style="list-style-type: none"> <li>- Knowledge on management (regulations, standards, codes, etc.)</li> <li>- Knowledge on expertise (case study, etc.)</li> </ul> <p>It's necessary to have strict regulations on the completion of annual continuous training; and registered engineers must yearly report their professional activities to state authorities.</p> <p>The recognition and management of practicing engineers is quite important that requires broad involvement of professional associations as international practices.</p> <p>The construction contractor grading system (3 classes), in my opinion, is not quite accurate because of the following reasons:</p> <ul style="list-style-type: none"> <li>- Organization structures of enterprises regular change with the fluctuation in term of personnel. Therefore, the registration and recognition of construction contractors (based on personnel) will sometimes result in virtual capacity. A construction contractor can prepare their profile for registration but whether their actual personnel are in similar situation with what they declare in the profile is a big concern.</li> <li>- The contractor's capacity is evaluated based on personnel's capacity while an engineer can join more than one company at the same time. Therefore, it's quite difficult to control the working time (for one enterprise) of an engineer leading to the difficulty in managing practicing engineers.</li> </ul> <p>However, contractor registration system and contractor grading system is one of solution to systematize contractors' capacity; and it should be done based on actual experience of contractors rather than on their declaration on capacities of the personnel.</p> <p>Regarding the issuance of qualifications for individuals and entities, it's necessary to carefully consider the issuance in order to avoid the situation that one entity or individual must obtain too many separate qualifications. One option to be considered is that one entity or individual is granted with one qualification code in which specifies all the fields of practicing and classes. The granting of a unique code will make the checking and management of qualifications more simple.</p> <p>In my opinion, in order to evaluate capacity of contractors when they participate in a package, the most accurate way is to do evaluation through their profile/bidding documents. And the substitution of candidates participating in the package must be strictly regulated in accordance with international</p>

	packages. This is the most accurate selection and evaluation, in my opinion. Of course, we still need to pay attention to the reputation and scale of the contractor; but the most important thing is the their real capacity.
<b># Comment from OCAJI</b>	
1	No comment.
2	We do not have reviewed this new evaluation system. Therefore it may be impossible to evaluate and send some comments in this time.
3	I am not familiar with engineering qualifications but if it reflects fair skill and quality of engineers, it is better to be installed.
4	How to grade foreign contractors in Vietnam? I think it is not necessary to have that grading system.
5	We will refrain from answering this query because we have not had experience in working under the control of PMU lately.
6	Professional operation registration system, contractors' information system and construction contractor ranking system are defined in the Construction Law shall take an important role in evaluate the contractor's qualification which shall help to simplify the bid evaluation. However the process of granting registration certificates and ranking the contractors should be conducted in transparent and open fashion.
7	We have no current experience in this regard, so have no comments.
8	In our opinion, rating of contractors according to technical evaluation on the basis of quality and safety performance results is necessary as part of conditions in prequalification of tenderers.

**2) Work performance evaluation system, in which each construction package is evaluated and scored when completion and resulting scores are used in procurement to select a capable contractor, have been applied in many countries. Do you think this system need to be introduced in Vietnam? Are there any issues to introduce work performance evaluation system in Vietnam?**

<b># Comment from VACC</b>	
	I myself know that this system is being applied in Japan. And I think that this is a new and interesting system which is different from the current regulations stipulated by Tendering Law of Viet Nam and could be referred to for application in Viet Nam. In my opinion, this system will help to enhance the role and position of the contractors who are qualified and do the business with good reputation ensuring quality and schedule of the works and to reduce the cases of bid rigging. The main issue to consider when applying this system is the transparency in evaluation.
<b># Comment from VECAS</b>	
	In my opinion, we should apply the score accumulation for contractors after completing construction packages/projects. However, it's necessary to split into two score beneficiaries: - Score accumulation for contractors for their project implementation and management capacity; - Score accumulation for professionally practicing individuals who directly participate in the project; The score accumulation could be done through granting certificates to contractors and individuals by PO. And the score will be collected and integrated into the system every year.
<b># Comment from OCAJI</b>	
1	It is preferable to be introduced.
2	Yes it is.
3	Fairness of evaluation is most critical in evaluation system. If fairness is guaranteed by completely objective evaluation criteria, it will better be installed. Evaluation for quality and safety better be included.
4	I don't think this system needs to be introduced in Vietnam, because in Vietnam the work performance evaluation is not objective or carried out in not correct manner.
5	We will refrain from answering this query because we have not had experience in working under the control of PMU lately.
6	A system to assess results of each performed construction contracts in Vietnam is needed setting up. In order to get such performance based evaluation system, assurance of transparency of evaluation document under strict supervision of the 3 <sup>rd</sup> party.
7	We are aware of the system, but at this point think that further studies regarding the method of implementation and proposed use in Vietnam should be considered first. There is a risk that the system may be adversely implemented should valid contractual disputes arise during the latter stages of the project and a greater emphasis is placed on the dispute when evaluation is carried out.
8	No comment

**3) Do you think current selection method is good enough to select a capable construction contractor? If it is "No", do you have any ideas to improve existing selection method?**

<b># Comment from VACC</b>	
	As far as I see, Tendering Law No.43/2013 has lots of renovation with more contractor selection methods for employers' selection based on specific conditions of each package. Documents guiding this Law have been prepared in accordance with international practices and reviewed and agreed by WB, ADB. I need more time to consider this matter.

# Comment from VECAS	
	In my opinion, the current selection of contractors in Viet Nam basically follow the selection procedure which is being applied in other countries. However, in order to evaluate whether it's effective or not and whether it helps to select capable contractors or not, it's quite difficult. We couldn't say that it's completely effective or completely ineffective. As abovementioned, the selection of contractors through contractor selection methods is quite clear with the main basis of evaluation of contractors' capacity (bidding documents). Therefore, it's the capability of employers (especially bidding evaluators) to be the key point to eliminate bad contractors and select capable ones. So, it's necessary to professionalize the bid evaluation (enterprises to provide bid evaluation service and bidding document evaluation, etc.) in order to support non-professional POs.
# Comment from OCAJI	
1	No comment.
2	We understand that it may be difficult to select the sufficient contractor by only scoring system. Because there is some transparency from view points of fair or evenness when making the score to completion of the project. Therefore, previous construction experience for similar project and work volume shall be one of the main key factor to evaluation.
3	Some measures that considers both price and technical matter which is already used in some developed countries like USA, Japan, EU will be better.
4	Yes, the current selection method is good enough to select the capable construction contractor
5	We will refrain from answering this query because we have not had experience in working under the control of PMU lately.
6	The current method of contractor selection, basically, is effected enough in terms of looking for the qualified contractors. However, the selecting system is should be more flexible to get more exact scores and more equal for the newly participated and potential contractors.
7	The selection method could be improved to take into account previous experience and ability. Generally previous experience etc. is used as a prequalification selection basis for tender lists and the final selection is usually based on price. A system that takes into consideration both price, capability and past performance as part of the final selection process would be worthwhile.
8	No comment

**4) Existing selection method put emphasis on bid price rather than technical evaluation. Do you agree to strengthen technical evaluation in bidding?**

# Comment from VACC	
	I think that this opinion is not quite objective; and the actual situation is not fully like this. If we strengthen technical evaluation in bidding (if any), it only make the "beautiful proposals".
# Comment from VECAS	
	In my opinion, for consultancy services for projects, technical evaluation should be put emphasis rather than bid price. As far as I know, in the past for technical consultancy services, we only had Quality Based Selection (QBS). QCBS and some other methods have become popular recently. (Since I work in consultancy service, I will focus on this field for providing comments). For consultancy services, the selection of reputable and qualified consultants is extremely important. However, reputable and qualified consultants will require higher price than other consultants. And for consultancy services, it's quite difficult to determine whether the service quality is good or not based on bidding documents with quantitative method. We shall rely on the reputation and capacity that the consultants have shown in previous projects to determine that they will provide good services such as drawings, project management services, etc. Therefore, for consultancy service, it's necessary to put emphasis on technical capacity, especially the capacity of experts, management capacity, and actual experience, etc. It's necessary to evaluate technical capacity before bid price. For construction packages, bid price is an important factor for selecting contractors. However, the weak point in assessing bidding documents now is that "assessment price" hasn't been correctly done. Consequently, original bid price could be low but it increases during implementation period, or equipment/materials used for construction works consume more energy than usual, etc. leading to the fact that the final price is quite high. So, for construction packages, it's also necessary to put emphasis on technical capacity but together with bid price in order to have final decision. In my opinion, the determination of bid price for bidding is only a preliminary basis requiring a firm check to determine price floor (Employer could hire an independent entity to carry out the price floor determination without public announcement). Employers could depend on this floor price to request contractors who submit bid price which is lower than price floor to explain why they can propose that rate and make decision whether they are selected or not. And all contractors who propose higher price without reasonable explanation will be excluded.
# Comment from OCAJI	
1	Yes, we agree.
2	No comment

3	No, as above emphasis on technical evaluation should be installed.
4	I think the current bidding system (2 –envelop bidding procedure) puts emphasis on both bid price and technical evaluation.
5	We will refrain from answering this query because we have not had experience in working under the control of PMU lately.
6	The current selection method focuses on both proposals of bid price and technical aspect. While technical requirements have already been defined clearly and openly in the bidding documents.
7	It appears that technical evaluation is used to exclude contractor's bids (based on experience shortfall) rather than concentrate on the technical strength of the bids. During bid preparation most experienced contractors are more likely to be able to evaluate the practicality and realistic timescale for a project and in doing so may arrive at a conclusion which does not comply with the requirements of the bidding documents. When technical evaluation is carried out to determine strict compliance with the bid document there is no opportunity to consider the contractor's alternative technical appraisal. Technical evaluation should not only be carried out to determine if a bid is fully compliant with the bidding documents but also to identify the strengths and technical benefits of the contractors' proposals and all these factors should be considered in addition to pricing levels
8	No comment

5) **Have you experienced any troubles on your work due to limited capacity of PMUs? Do you have any ideas to improve capacity of PMU?**

<b># Comment from VACC</b>	
	There are many problems regarding the mechanism (model) of PMUs. Our current mechanism is quite different. It's necessary to refer to the mechanism of PMUs which was stipulated by MOC previously.
<b># Comment from VECAS</b>	
	I myself haven't experienced any trouble with PMUs, but it's completely right and suitable to improve capacity of PMU in Viet Nam now. In my opinion, the project management must be professionalized and could be done as a service provided by a professional entity. This entity could be a professional PMU or project management enterprise. Except for special projects for which the project management must be done by specialized PMU, other projects could apply the bidding to select PMU as other services. Therefore, in order to win project management packages, entities must be capable enough in accordance with the regulations and recruit capable individuals to carry out tasks of packages. And then the projects will be well managed and implemented. And after being put into use, bidding will be carried out for project/facility operation management. The operation management could be done well only when it is carried out professionally. Therefore, in my opinion, PMU should focus on implementing administration management of projects as a special department in local authorities; and the technical management for projects should be done by capable entities.
<b># Comment from OCAJI</b>	
1	Slow decision-making due to structure of the organization and the lack of knowledge and experience.
2	No comment
3	I have not personally worked directly with PMU, so refrain from making comments.
4	Yes, sometimes we have experienced the troubles when working with PMU....
5	We will refrain from answering this query because we have not had experience in working under the control of PMU lately.
6	There are a lot of issues related to management skills/qualification/capacity of the Project Management Unit. Capacity building in management for PMU is needed (especially training provided for them by foreign experts). An evaluation system on project management skills of each PMU staff/department with scores given by the contractors and consultants is in needed.
7	We have no comments to make in this respect.
8	No comment



**Output 5: Guidelines of Contract Management and Contract Alteration are formulated with the following process**

- Contract documents and management to review and comparison with FIDIC contract
- List up of differences and gaps between current contract and FIDIC contract
- Formulation of guidelines on contract management and contract alterations of construction contractor works

For preparation of the above guidelines, the Project team would like to have your comments and requests on the following items.

**1) Do you realize difference between Vietnam contract and FIDIC contract? If yes, please indicate differences between Vietnam contract and FIDIC.**

<b># Comment from VACC</b>	
	It will take much time to show the difference between these two contracts. I think that the major differences are in term of bidding, contract, and package capital keeping.
<b># Comment from VECAS</b>	
	(To be provided later)
<b># Comment from OCAJI</b>	
1	No idea about Vietnamese Contract conditions.
2	We have not so much knowledge to contents of Vietnam Contract. However, we sometime get information from Vietnamese Subcontractor that Vietnam Standard for Construction Contract is quite unilateral condition compared with FIDIC.
3	I have not worked under Vietnamese contract before, so refrain from making comments.
4	Yes, in Vietnam contract, the priority is Vietnamese regulations
5	Nothing particular
6	Vietnam Contracts are still very simple in which more terms and conditions relating to work items of mobilization, construction and liability of defects to bind the parties should be added. Now, FIDIC contract forms are gradually taken into account and considered as attachment. However, it still needs to be revised for harmonization for appropriateness with Vietnamese construction conditions.
7	<p>- Comments in this section are based generally on the "old" FIDIC red book conditions. It appears to be increasingly common for the new FIDIC red book conditions to be used or alternatively the pink book for MDB Harmonized Conditions.</p> <p>- There continues to be a general impression in Vietnam that the FIDIC contract is an international style of contract and not a normal contract procurement solution for managing and operating projects in Vietnam. This impression can also exist even when it is clear that the appointed contractor is an international Japanese contractor operating under an international ODA project.</p> <p>- This can result in a hybrid method of contract management and operation where FIDIC contract requirements similar to Vietnam contract are used but when FIDIC requirements are different or difficult to understand/implement then a mix of FIDIC requirements and Vietnam contract requirements are sometimes introduced.</p> <p>- The Employer/Engineer is provided with the opportunity to revise the standard FIDIC contract within the Particular Requirements of the Contract. JICA provide good guidelines advising how this is carried out. However sometimes these guidelines are not followed strictly and sometimes further additional revisions are included. There is also a tendency for Vietnam laws or decrees to be included within the Contract documents, which in recognition of the provisions of the ODA agreement should not be required.</p> <p>- Clauses within the Contract that are normally substantially revised from the FIDIC standard are the clauses relating to payment and variations.</p> <p>- Also the duties of the Engineer under the FIDIC contract are sometimes adjusted to be shared or carried out by the Employer, instead of them being solely the duty and responsibility of the Engineer as intended by FIDIC.</p>
8	Construction Contract in Vietnam is also based on FIDIC, and there are no specific contractual problems. However, there are lots of cases that contractor is given verbal instructions from consultant and client which are not under the contract and/or which do not entail responsibility. If contractor does not accept such instructions, there are cases that he cannot advance the work. It takes too much time in communicating in writing, which has significant influence upon the progress of the work.

**2) Please state your experiences in contractual disputes and arguments in Vietnam, if any.**

<b># Comment from VACC</b>	
	It's necessary to unify the guidance on contract between Tendering Law and Construction Law in order to avoid difficulties to POs and contractors. The major problems are in terms of ensuring budget for packages, payment, and adjustment in all types of contracts. Current instructions which are quite general could not help to solve problems in actual situations.
<b># Comment from VECAS</b>	
	(To be provided later)

# Comment from OCAJI	
1	The Employer may change the Conditions of the Contract even after signing the Contract.
2	Please refer to above 1) comment.
3	I don't have experience in disputes in Vietnam personally, so refrain from comments.
4	None
5	Nothing particular
6	We have not seen any contractual disputes in terms of legality. The disputes are settled in amicable way or through negotiations.
7	<p>- One of the main problems with contractual disputes in Vietnam is that there is not a large degree of experience or dispute history available for reference purposes. Vietnamese contractors previously have not been willing or are unable to raise disputes for various reasons, so unless a major problem existed on a local contract many Vietnamese contractors would complete projects without raising any formal contractual dispute. This results in a general lack of experience in dealing with disputes, both at local contractor and engineering professional level. This appears to be particularly the case with Vietnamese contractors in respect of delays to the project and delayed completion.</p> <p>- There is a worldwide tendency for disputes not to be reviewed and resolved at the time they are raised. Most engineers and employers prefer to defer making an investigation into the grounds for the dispute and making a decision on any entitlement to additional cost or time until after the project is completed. Vietnam is no exception to this tendency.</p> <p>- If a dispute cannot be dealt with properly and agreed between the Contractor and Employer, the only alternative for the contractor, under the traditional FIDIC red book, is to refer the dispute to arbitration. This is a very expensive and time consuming process that will not provide a quick solution. It is also a serious decision for any contractor to make. Referring a dispute in Vietnam to arbitration will have many implications for the contractor that are likely to extend beyond the contract in question.</p> <p>- A recent development that is beneficial, is the introduction of Dispute Boards (DB). The introduction of a DB to a project is not likely to reduce the number of disputes, but it does provide the opportunity for the dispute to be handled professionally, locally and quickly. It appears that there is a tendency on some projects to make the DB an ad-hoc DB that is only formed after a dispute has been raised and cannot be resolved by the Engineer or Employer. This approach is counter productive, as the basic intention of the DB provision is that the DB panel is established early on in the project so that the DB members are fully aware of the details and history of the project. Using the knowledge gained prior to the dispute allows the DB to quickly and economically provide decisions on the details of any disputes.</p>
8	Basically, construction contract in Vietnam follows in FIDIC. However, conditions of contract in Vietnam can be substituted by particular conditions by reason of Vietnam laws, and can be one-sided. Vietnam laws, which should be the basis for substitution for FIDIC, are unclear in many cases

### 3) In order to improve the contract management in Vietnam, do you have any ideas?

# Comment from VACC	
	It's necessary to add strict sanctions in contract management
# Comment from VECAS	
	(To be provided later)
# Comment from OCAJI	
1	The Engineer should be provided with more power as an independent position.
2	It may be better to refer the international contract standards like as FIDIC especially the treatment when some of disputes happened.
3	More education on international contract management should be implemented
4	It is better to follow FIDIC
5	Nothing particular
6	More training to enhance contract management skills to Vietnamese engineer in general and increase their knowledge of FIDIC and other forms of contracts in particular should be provided.
7	<p>- There are many ways of improving contract management from both an education and management viewpoint. Increased co-operation and information exchange between Japanese and Vietnamese professionals may assist with this.</p> <p>- One development in other countries is for professional organizations to implement continuing professional development requirements to ensure that their knowledge and experience is kept up to date. Although the system does also have disadvantages, it is beneficial if engineering professionals are encouraged to keep their professional knowledge and project experience up to date and relevant.</p> <p>- On a practical level, Contractors in Vietnam are always under pressure to complete projects on time or even earlier than required. In this situation it is important that decisions and approvals are provided to the Contractor within a reasonable time period.</p> <p>- It is also impossible to limit the extent of variations or additional work required on a project, but it is important that when they do arise that these changes do not unduly delay the Contractor and that he does not have to wait for unreasonable periods for approval to carry out the additional or varied work and that payment of variation work is done on time also.</p> <p>- Contract management would be greatly improved if it was generally accepted that no contract award or</p>

	contract commencement should take place until it has been confirmed that 100% of the land for the project has been obtained by the Employer and that there is no land procurement or right of way issues outstanding prior to commencement of the works.
8	No comment

**4) There are issues and problems in defect liability in Vietnam. Do you have any idea to improve situation in regard to defect liability?**

<b># Comment from VACC</b>	
	The situation that POs do not pay contractors when warranty period is over has created difficulties to contractors; and this is the reason for insolvency in Viet Nam now. It's requested to develop a mechanism where guarantee amount paid by contractors is kept as deposit in the bank, and when warranty period is over and contractors fulfill his duties as stipulated in the Construction Law, the bank will return that amount to contractors. Otherwise, contractors' money will be illegally kept.
<b># Comment from VECAS</b>	
	(To be provided later)
<b># Comment from OCAJI</b>	
1	More budget should be considered at the planning stage.
2	The government shall be permit to add the cost of defect liability in contract price and cost estimation standards in Vietnam and the action of the Contractor on Defect Liability Period also shall be one the key factor to making the score at completion.
3	Responsibility for scope of defect should be clearly mentioned and judged fairly. Third party involvement and commitment to use their result is also necessary.
4	No idea
5	Nothing particular
6	Compulsory legal regulations on liability of defects to the woks should be taken place instead of being seen on paper. Such regulations shall bind the contractors' liability to the works.
7	- If all parties are fully aware of the Contractor's responsibilities and duties during the DLP as described in the contract, there should be limited issues relating to the DLP. - However, the intention of DLP is often misunderstood in that the Contractor is expected to carry out routine maintenance and repairs during the DLP. In the standard FIDIC contract it is clear that the Contractor is only responsible for investigating and rectifying defects that are identified as his responsibility. He is generally not responsible for cutting grass or replacing light bulbs etc. unless a separate maintenance contact has been included for the DLP. - There may also be difficulties resulting after handover of the project, when the responsibility for routine maintenance is not carried out directly by the original employer and that this has been subcontracted or the responsibility transferred to various other parties. This situation may generate additional requests for the Contractor to attend to or rectify matters that are not actually his responsibility under the contract. - It is also important that the Employer makes prior arrangements, in advance of completion by the contractor, for handover of the project. This is necessary to ensure that the entire project can be handed over on time and the DLP commence effectively when the Contractor has completed the works.
8	No comment

**5) There are issues and problems in construction insurance (including warranty insurance) in Vietnam. Do you have any idea to improve situation in regard to construction insurance (including warranty insurance)?**

<b># Comment from VACC</b>	
	Insurance is related to risks in construction; and this issue hasn't been studied well in current mechanism.
<b># Comment from VECAS</b>	
	(To be provided later)
<b># Comment from OCAJI</b>	
1	No comment.
2	In the contract specification, it is not clearly mentioned about Insurance Condition even this is work scope of the Employer. In case, the Contractor will add the required price to arrange the insurance by own in Contract because of avoiding any risk during construction. Therefore, in order to execute futility the scope of arrangement of insurance shall be beard by the Contractor. It may become the cost down for whole contract price.
3	Basic foundation for responsibility is not clear. Construction insurance is to reduce risk or transfer risk to insurance company for some specific risks. First thing is to clarify risks in scope of owners and contractors clearly.
4	We have no problem with construction insurance. (it is better if the condition for temporary work insurance is clearer)
5	Nothing particular
6	More transparency in risk and damage assessment.
7	We have no current experience of any relevant issues in
8	No comment

**Others: Free Statement**

#	Comment from OCAJI
8	In a certain work, temporary works which occupy major part of construction amount became the scale smaller than that originally planned due to change in work (design change) after contract award, and construction becomes easier accordingly. This appears a problem because impartiality at the time of tendering is not secured. In our opinion, it is essential that not only construction cost but technological proposal are evaluated on the basis of careful examination of technical proposals including proposed construction method. Quality and safety to satisfy the requirements of client can be secured in such way.



## Annex 11-2

### Summary of the Question and Answer in the Dialogue

Dialogues with VACC, VECAS and OCAJI have been held in 19<sup>th</sup>, 20<sup>th</sup> and 21<sup>th</sup> April 2016 for Output 1 (Quality Management), Output 2 (Safety Management) and Output 3 (Cost Estimation).

We, JICA Experts have summarized the question and comment from each association member of VACC, VECAS and OCAJI and our answers of Output 1, 2, 3 and others in the feedback sheet. The summarized feedback sheet is shown in below.

#### Output 1 Draft Standard Plan for Quality Management (SPQM)

#	Question/Comment	Answer
General/Common		
1	<ul style="list-style-type: none"> <li>In JICA loan projects, QMP is strictly reviewed by PMUs leading to a better QM which the state budget project has not reached the situation. Thus, SPQM is quite useful for local contractors when preparing QMPs for bidding dossiers in the future. (VACC)</li> </ul>	<ul style="list-style-type: none"> <li>We are glad that this SPQM is useful for both bidding stage and implementation stage, for both construction contractors when preparing quality management plans and POs when reviewing the plans. (As a side effect, SPQM will be effective example for bidders.)</li> <li>&lt;No further action needed&gt;</li> </ul>
2	<ul style="list-style-type: none"> <li>Not only SPQM, but also cost estimation and training for engineers are important for QM. (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>The Project includes training for wider range of stakeholders for infrastructure construction projects.</li> <li>&lt;No further action needed&gt;</li> </ul>
Draft Standard Plan for Quality Management (SPQM)		
3	<ul style="list-style-type: none"> <li>SPQM is highly appreciated since it is a good and useful document for construction contractors' reference when preparing QMP for bidding dossiers. At the same time POs have to check the QMP submitted by contractors with appropriate understanding. (VACC)</li> </ul>	<ul style="list-style-type: none"> <li>As written in preface, SPQM is also utilized so that PMUs check whether necessary items and contents are included in QMP submitted.</li> <li>&lt;No further action needed&gt;</li> </ul>
4	<ul style="list-style-type: none"> <li>In Vietnam, regulation regarding QM is organized to some extent, however actual implementation is poor resulting quality defects. Thus, we need to consider QM, not only during construction period but also after construction. (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>SPQM includes the countermeasures in case when quality defects are detected. As countermeasures, both "What to do?" and "How to do?" such as procedure for considering counteraction to the defect and its implementation structure, are mentioned.</li> <li>Defects liability will be considered in output 5 of the Project which is going to have dialogue separately.</li> <li>&lt;No further action needed&gt;</li> </ul>
5	<ul style="list-style-type: none"> <li>To improve comprehensive QM system, approach &amp; methodology to develop SPQM is effective and appropriate. For further improvement, good practice / misconduct examples are requested to be included. (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>Essence of those practice are included into SPQM to some extent. (Experience obtained time by time should be periodically reflected to SPQM.)</li> <li>&lt;No further action needed&gt;</li> </ul>
6	<ul style="list-style-type: none"> <li>Regarding the standards applied for SPQM, what is the priority for application between TCVN, International Standards and others? (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>In the SPQM, TCVN was firstly considered to be applied, then international standards such as AASHTO, Eurocode and JIS were considered. Standards to be applied were carefully selected considering current Vietnamese condition based on case study of both loan and state budget projects and discussion with SACQI's engineers, not just applying international standards without any care.</li> <li>&lt;No further action needed&gt;</li> </ul>
7	<ul style="list-style-type: none"> <li>In the loan project, specification of the contract is developed based on FIDIC</li> </ul>	<ul style="list-style-type: none"> <li>Ditto (to 6 response)</li> <li>The issue mentioned should be discussed not only in</li> </ul>

#	Question/Comment	Answer
	conditions, however the subcontractors tend to follow only Vietnamese standards / regulations. The discrepancy sometimes makes the implementation of works difficult. SPQM has to unify the standards applied. (OCAJI)	SPQM but entire construction QM system. <No further action needed>
8	• Among three (3) main stakeholders of construction projects, POs are entitled to make decisions but lack of professional knowledge. Thus, standards should be clearly organized. (OCAJI)	• As written in the preface of SPQM as purpose, SPQM is recommended to be referred not only by construction contractors but also by PO side. SPQM could be helpful to develop POs' capacity. <No further action needed>
9	• Based on the participants' experience, do you think whether SPQM could be used for all types of construction works? (MOC/ICD)	• It is difficult to prepare one, unite manual / plan to cover all types of construction work, however the SPQM is still quite useful for Vietnamese contractors to refer to for developing their own QMPs. <No further action needed>
10	• In Japan, photography inspection is sometimes applied, however it is not utilized in Vietnam. Photography inspection is mentioned in SPQM? (OCAJI)	• Photography inspection is not mentioned in SPQM because basic inspection method have to be secured first at this stage. However, photography inspection is one of effective way to carry out quality inspection with limited resources of both contractors and PMUs. This is expected to be discussed in near future. <No further action needed>
Others		
11	• In my 18 years of experience of work at construction projects in Japan, JIS is well organized standard structure. JIS and other Japanese standards is hoped to be translated into English and Vietnamese to enhance QM in Vietnam and other Asian countries. (OCAJI)	• Japanese standards are hoped to be translated into English in order to be broadly utilized especially in Asian countries. (English version of JIS "A" and "Z" series referred in SPQM is available.) <No further action needed>

### Output 2 Draft Standard Plan for Safety Management (SPSM)

#	Question/Comment	Answer
General/Common		
1	• International Standards such as ISO. (VACC)	• International standards such as Japanese standards, harmonized with ISO have already been considered in the SPSM.
Draft Standard Plan for Safety Management (SPSM)		
2	Chapter 3 • "Safety Organization" and "Safety and Health Council" is such a good idea, following current practice of Japan. Regular and unscheduled inspection by the Safety and Health Council. (OCAJI)	• The rules on scheduled and unscheduled inspections should first be determined by the authority.
3	• Qualification and required level of safety manger and safety supervisors. (OCAJI)	• The Draft SPSM mentions the necessity of training and qualification for these positions in accordance with Vietnamese regulations. The required level will be also considered in future.
4	• Full time safety officers at the construction site. (VACC)	• In the draft SPSM, the arrangement of safety supervisors and safety officers for construction sites follows the stipulation of Article 34 of Decree 59/2015 by MOC.
5	Chapter 4 • Duration and frequency of education and training for workers. (OCAJI)	• A half day training. In addition, the contractor shall organize monthly training for all workers for a half day.
6	Chapter 5 • For JICA loan projects, it's	• VACC members are kindly requested to share actual

#		Question/Comment	Answer
		compulsory to follow the safety working cycle. On the other hand, for domestic projects, do not follow this model because of lack of the budget for this activity. (VACC)	implementation in term of safety working cycle as recommended in the SPSM at your sites.
7	Chapter 6	• Measures for temporary work, scaffolding. (OCAJI)	• There is one section describing the measures for prevention of accidents related to scaffolding.
8	Chapter 9	• Emergencies and unforeseen circumstances should consider the expected and unexpected situation, as well as environmental management inside and outside of the construction site. (VECAS)	• Consider to use appropriate terms ensuring the suitability with popular terms in Viet Nam. • Environmental Management Plan is explained in Chapter 8 on Occupational Health and Environmental Management.
9	Chapter 10	• Relevant authorities to be reported by Contractors in case of accidents and incidents. (OCAJI)	• According to Vietnamese regulations, local Provincial People's Committee, Department of Labor, Invalids and Social Affairs, and Fire Station/Ambulance, Commune Health Center, and Police as shown in Figure 9.1.
10		• Insensitive and penalty systems to enhance safety awareness of workers. (OCAJI)	• Disciplinary procedures are explained in this chapter. Encouragement system to raise workers' awareness on safety is also mentioned.
	Others		
	-	-	-

**Output 3 Draft Guideline on Cost Estimation for Indirect Construction Contractor Works in Viet**

**Nam (GLCE)**

#		Question/Comment	Answer
	General/Common		
1		<ul style="list-style-type: none"> <li>Thanks to the issuance of Circular No.06/2016 by MOC, indirect cost for construction contractors shall be correctly and sufficiently determined.</li> <li>Regarding Output 3 of CCQS Project on indirect cost, have you updated your study for recommendation for Viet Nam based on this Circular? (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>CCQS Project officially commenced last year, in 2015, when Circular No.06 was not issued yet. Circular 04/2010 was referred to for our study. Project will be until 2018, and in addition to incorporating suitable comments from Vietnamese construction industry to Project outputs, all new regulations related to our Project activities shall be updated and reflected accordingly.</li> </ul>
2		<ul style="list-style-type: none"> <li>According to our experience, some Vietnamese authorities usually request contractors to submit many forms with difficult calculation. Therefore, MOC is kindly requested to make the forms simple and carry out on expense trend survey to regularly update the cost norms.</li> <li>In order to ensure quality and safety for construction projects as well as certain profit for both Japanese and Vietnamese contractors, a reasonable cost estimation system is needed. Therefore, MOC is kindly requested to consider this matter. (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>MOC has recently issued some regulations regarding the cost estimation system such as Circular No.06. When preparing these regulations, we referred to practices of foreign countries including Japan. Therefore, I think that the cost items stipulated in these new regulations are quite sufficient for contractors. You can access MOC website for these new regulations.</li> </ul>
	Draft Guideline on Cost Estimation for Indirect Construction Contractor Works (GLCE)		
3	Chapter 5 and 6	<ul style="list-style-type: none"> <li>Decree No.32/2015 on construction cost management has taken effect since May, 2015 but no circular guiding this Decree has been issued. Therefore, it's difficult for construction contractors to prepare cost estimation.</li> </ul>	<ul style="list-style-type: none"> <li>MOC has just issued Circular No.06/2016 replacing Circular 04/2010 guiding the preparation of construction cost estimation. From now on, construction contractors could follow this Circular when preparing cost estimation for your construction works.</li> </ul>

#		Question/Comment	Answer
		<ul style="list-style-type: none"> <li>Regarding GLCE, please clarify the category for some cost items such as contract performance cost, cost for electricity connection system, cost for cranes for piling, etc. (VACC)</li> </ul>	<ul style="list-style-type: none"> <li>For example, contract performance cost is categorized in Overhead items (page 22), or cost for electricity connection system could be categorized in Utility cost Items under Common Indirect Cost (Table 5-2 5) (2) in page 16), etc. Therefore, if you have time, please read thoroughly this material for further information.</li> </ul>
4	Presentation Material	<ul style="list-style-type: none"> <li>Overhead rate in Viet Nam as analyzed in slide 10 is not quite correct. Please be noted that all CIENCOs carry out civil works only while VINACONEX carry out both civil works and building works. If you want to have data that can exactly reflect the rate for building works, it's recommended to collect data from financial statement of CotecCons or Hoa Binh Corporation. (VACC)</li> </ul>	<ul style="list-style-type: none"> <li>The rate shown in this table is quite tentative. Further study shall be carried out in coming time for more data analysis.</li> <li>Slide 14 of the presentation file shows the information related to expense trend survey. We are now recommending MOC to make trial expense trend survey; and if it comes to your company, please cooperate to provide data for the survey.</li> <li>Slide 9 of the presentation file shows the differences of the rate of indirect cost between Viet Nam and Japan. As you can see here, Japanese rate is higher than that of Viet Nam. Within this Project scope, we recommend MOC to increase the rate of indirect cost in Viet Nam following international level.</li> </ul>
5	Presentation Material	<ul style="list-style-type: none"> <li>In Slide 11, JICA Project Team recommended some cost ratios/percentages to be applied for Vietnamese construction projects. However, as you know, according to Japanese system, these ratios/percentages are different based on project types and scales. How about is your recommended ratios for Viet Nam? (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>So far, our studies have focused only on civil works. Therefore, the GLCE shall not be applied to all types of projects in Viet Nam but on civil projects. And further studies for other types of projects might be considered in the future.</li> </ul>
6		<ul style="list-style-type: none"> <li>According to the Title, the Project is to enhance capacity in cost estimation in general. However, Output 3 for the Dialogue today is about indirect cost only. Is there any change in term of Project objectives? (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>Output 3 focuses on construction contractor costs, of which indirect cost is one important item. And JICA expert is now discussing with MOC/CED about the extended study on direct costs. Please be informed that costs for other stakeholders are not included in this Project study.</li> </ul>
7		<ul style="list-style-type: none"> <li>Regarding the cost for safety management in Viet Nam, it's necessary to clarify this item in cost estimation. The differences in term of safety management costs between domestic projects and JICA ODA loan projects are shown clearly at construction sites. When conducting site visits to JICA ODA projects, we can see that workers' accommodation conditions are quite good, whereas it's very poor in domestic projects. It's due to the fact that, in order to win the contract, lots of construction contractors have to reduce the portion of indirect cost. Therefore, it's recommended to clarify this matter right at bidding stage by piling up method or detailed cost estimation.</li> <li>Regarding the cost for quality management, it's necessary to clarify the cost item for site laboratories because actual mobilization of</li> </ul>	<ul style="list-style-type: none"> <li>Through our studies, we also found the big differences in term of safety and quality management between actual situation and plan. Therefore, we will continue our study to work out the most suitable system of cost estimation for safety and quality management.</li> </ul>

#		Question/Comment	Answer
8		<p>these laboratories is not sufficient. (VACC)</p> <ul style="list-style-type: none"> <li>The Project's current study on indirect cost and coming extended study on direct cost is highly appreciated and expected to help construction contractors in adequately allocating costs for necessary items. In actual situation now, when we hire labors, the actual costs paid to them are always higher than the cost norms stipulated by MOC. Therefore, we have to cut some portions of indirect costs to compensate for this additional expenses.</li> <li>Regarding the Project recommended indirect cost, in my opinion, additional rates of <math>\alpha</math> and <math>\beta</math> could be suitable when applying for some cost items. However, for some specific projects with special characteristic related to regions, piling up method is more suitable and accurate. (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>The recommended rate in this GLCE is not final recommendation from JICA expert to MOC. Further study shall be carried out within this Project scope in order to provide more suitable recommendation in term of indirect costs to MOC. Additionally, we are now recommending MOC to make trial expense trend survey which will help to grasp the reality of expenses in recent public construction works and verify whether existing rates of expenses in present cost estimation system meet actual situation of construction works, and hence decide the most appropriate rates of expense every year.</li> <li>Circular No.01/2015 issued by MOC in 2015 provides guidance in determination of the unit labor cost in the management of construction costs. If construction contractors follow the regulations here, wages for labors will be calculated sufficiently. However, your comment on this matter will be considered during the discussion between JICA expert and MOC/CED C/Ps.</li> </ul>
9		<ul style="list-style-type: none"> <li>Regarding 7 cost items of common indirect cost as recommended by CCQS Project, I wonder whether they could fully reflect all necessary costs for this item or not.</li> <li>In order to recommend suitable rate for indirect cost of construction projects in Viet Nam, JICA experts should not fully rely on data collected from financial statement of construction contractors through expense survey trend only. It's necessary to directly study different kinds of construction projects of different scales, locations, etc. for more reliable data and then provide more suitable recommendations to MOC.</li> <li>In Viet Nam, the competitiveness in bidding among construction contractors is quite fierce leading to the situation that many contractors tend to reduce the indirect costs to win the contracts. It's the reason why quality and safety for construction works are sometimes not ensured due to lack of necessary costs. It's expected that JICA CCQS Project will help to improve this matter through your recommendations to State authorities and POs. (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>Regarding your first inquiry, please be noted that the presentation file on GLCE only covers some basic information of our study. Further detailed and specific information is specified in full version of this GLCE attached together with the Dialogue handouts distributed to all participants and in our Interim Report which could be provided if you need. If you read through all these materials, you will see that each cost item of common indirect cost and site management cost is already broken down clearly and specifically.</li> <li>Regarding your second inquiry, please be informed that, within our Project scope, in addition to financial statements from construction companies, we also studied some case study projects of both JICA loan and State budget in order to find out the most suitable cost rate for Viet Nam.</li> <li>It's expected that the Project Output, GLCE, will be officially issued with a guiding Circular by MOC that can help to improve the current situation in term of portion for indirect cost in Viet Nam. The roadmap for this issuance is subject to the discussion between JICA expert and MOC/CED. Additionally, Project Output 4 on evaluation mechanism on engineering capacity and performance of construction contractors is being studied and expected to reduce the focus on pricing in bidding in Viet Nam now when it is legalized by MOC.</li> </ul>

#	Question/Comment	Answer
10	<ul style="list-style-type: none"> <li>Among 7 cost items of common indirect cost specified by JICA Team, the cost for temporary building, according to my experience, is very low. Therefore, if possible, JICA Project Team should pay further attention and studies on this item. (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>Your opinion will be considered.</li> </ul>
11	<ul style="list-style-type: none"> <li>GLCE has dealt with indirect cost only. Will direct cost and cost norms be studied within CCQS Project? Cost norms of Vietnamese system have remained unchanged for a long time while technologies have changed so much. Therefore, current cost norms are not quite suitable and applicable to current situations in Viet Nam. (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>We know that the cost estimation system consists of two main items which are indirect cost and direct cost. And direct cost is now being considered for study and survey in coming time within CCQS Project.</li> </ul>
12	<ul style="list-style-type: none"> <li>Types of construction, budget should be clarified for suitable study of <math>\alpha</math>, <math>\beta</math>, <math>\gamma</math>. It's recommended to refer to model of construction contractor which manages very well on the quality and safety with the normal cost = 120% other contractors. 20% is understood to be the indirect cost generating during the implementation. (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>Good contractor manages well on the construction quality and safety etc. likely pays 20% more than normal contractors. Appropriate and exact performance on construction implementation needs more indirect cost than current estimation. Project shall suggest requisite minimum rate of indirect cost of typical construction projects. GOV has to consider and reflect these suggestions for actual regulations relevant cost estimation system.</li> </ul>
13	<ul style="list-style-type: none"> <li>For project which are involved by Japanese contractors or foreign contractors in general, please consider for the increase of percentage of indirect cost, especially the site management cost. (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>The site management cost shares biggest in indirect cost and it is suggested that this cost has to be increased suitably for the international level.</li> </ul>
Others		
14	<ul style="list-style-type: none"> <li>The most important objective of all Vietnamese construction enterprises is to make construction activities in Viet Nam become better and better.</li> <li>Regarding the quality management, the recommendation by JICA expert and the approach following Japanese practices based on the local standards, regulations and procedures are highly appreciated. In my opinion, it's better for us to improve the overall system first and then improve specific items such as developing guidelines or manuals. The latter could be done by MOC even after CCQS Project complete. Additionally, it's also necessary to consider an effective awarding and discipline mechanism following Japanese practices in order to enhance relevant stakeholders' awareness on quality assurance.</li> <li>Regarding the safety management, the responsibility on safety assurance is mainly by construction contractors. The supervision of other relevant stakeholders such as supervision consultants or POs is additional factor only. Therefore, in order to ensure good safety management, construction contractors shall well equipped</li> </ul>	<ul style="list-style-type: none"> <li>Training courses and seminars are scheduled to be organized during and after project terms, for which lecturers/presenters are MOC (SACQI, CED, CAMA, AMC) C/Ps and participants are all relevant stakeholders in construction sector of Viet Nam such as DOCs, POs, Contractors, Consultants, etc. Therefore, it's believed that capacity of these stakeholders will be enhanced accordingly. For the training activities after Project completion, it fully depends on MOC side. Therefore, in order to ensure the Project sustainability, MOC is expected to make plan for this activity soon.</li> </ul>

#		Question/Comment	Answer
		<p>themselves with knowledge on this matter and strictly follow relevant regulations. Additionally, Japanese practice on awarding and discipline mechanism on safety management should also be referred by Viet Nam.</p> <ul style="list-style-type: none"> <li>• Regarding the cost estimation management, it could be done well only with the efforts of all relevant stakeholders, namely POs, construction contractors, supervision consultants. And all the cost items in general and in the GLCE in particular should be broken down as specific as possible. The term “other costs” should not be used too much in order to avoid misunderstanding or confusion in different stakeholders in different levels.</li> <li>• From the viewpoint of VECAS representative attending the Dialogue today, I have two comments as follows:</li> <li>• It’s expected that Project outputs will be legalized by MOC so that they could be widely applied for improvement of current situation of construction sector in Viet Nam.</li> <li>• It’s necessary to pay attention on training courses to disseminate Project outputs to relevant stakeholders in Viet Nam during and after Project term.</li> <li>• A Strong point is on preparing and issuing formats of contracts in construction sector. Therefore, it’s appreciated if we could officially join the activity studying and training on contracts. (VECAS)</li> </ul>	
15		<ul style="list-style-type: none"> <li>• For Japanese construction contractors, after such a long time working in Viet Nam, have you ever faced any difference in term of understanding on indirect cost items between Viet Nam side (POs, subcontractors) and Japan (lead contractors)? (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>• This is actually what we are concerned so much when working in Viet Nam. The proposed indirect costs by Japanese contractors have been always evaluated to be high by Vietnamese POs, especially when they are compared to Vietnamese norms. Therefore, it’s necessary to analyze the differences in term of understanding on indirect costs between Viet Nam and Japan systems.</li> </ul>
16		<ul style="list-style-type: none"> <li>• State authorities should have changes in indirect cost of contractors and apply for constructions to make the project effective. (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>• From the results of the project, appropriate indirect cost will suggested. Then, State authority, considering it, shall decide some regulations for better cost estimation work for contractors.</li> </ul>
17		<ul style="list-style-type: none"> <li>• There should be further study to apply unitedly soon nationwide on cost estimation and management. (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>• Based on the project results, current cost estimation system shall be improved in the near future, and then with dissemination of new governmental regulations, cost estimation can be implemented unitedly nationwide. This act shall be carried out by Vietnamese government by itself as soon as possible.</li> </ul>

**Others**

#		Question/Comment	Answer
	General/Common		
1		<ul style="list-style-type: none"><li>• Conclusion of this study to be reflected in Vietnamese regulation is highly expected. (OCAJI)</li></ul>	<ul style="list-style-type: none"><li>• We will work hard to live up to your expectations.</li></ul>
2		<ul style="list-style-type: none"><li>• I think that we need more time for discussion. (OCAJI)</li></ul>	<ul style="list-style-type: none"><li>• We expect that MOC will keep a sustainably meeting in the future</li></ul>



### **Annex 11-3**

#### **Summary of the Question and Answer in the Dialogue**

Dialogues with VACC, VECAS and OCAJI have been held in 10<sup>th</sup> March 2017 for Output 4 (Construction Contractor Evaluation Method/Selection Mechanism) and Output 5 (Contract Management and Contract Alteration).

We, JICA Experts have summarized the question and comment from each association member of VACC, VECAS and OCAJI and our answers of Output 4 and 5 and others in the feedback sheet. The summarized feedback sheet is shown in below.

#### **Output 4 Construction Contractor Evaluation Method/Selection Mechanism**

Note: WPE: Work Performance Evaluation, EM: Evaluation Method, SM: Selection Mechanism

#		Question/Comment	Answer
1	WPE	<ul style="list-style-type: none"> <li>Currently in Viet Nam, we don't have any kind of work performance evaluation (WPE). In the end of construction completion, there is only minutes of acceptance or even contract liquidation in which simple assessment on contractors is included. If state authority wants to evaluate performance of contractors during implementation, the evaluation sheet should be very detailed and incorporated into circulars, decrees that POs/contractors should follow. (CECO)</li> </ul>	<ul style="list-style-type: none"> <li>As you said, in Vietnam final acceptance is simple and not enough to raise awareness for better quality, therefore we propose work performance evaluation.</li> <li>If the evaluation sheet is very detailed, it will be difficult to commence. Therefore, we prepare the evaluation sheet with about 100 questions (100 points). We should start from simple system and improve gradually.</li> </ul>
2	WPE	<ul style="list-style-type: none"> <li>If the evaluation is applied, there will be a difficulty for POs/contractors. If during WPE, there are many mistakes by the contractor, the project owner will face difficulty to conduct acceptance since Audit Company will raise questions about those mistakes. (CECO)</li> </ul>	<ul style="list-style-type: none"> <li>If many mistakes are conducted in actual implementation, such records should be stored and utilized for future assessment of contractors</li> <li>In construction, even if there are mistakes during evaluation, the project owners finally have to accept the constructed object on a basis of requirements for acceptance.</li> <li>The evaluation for quality assessment of construction work is only 50 points. Other 50 points are for assessment of organization work i.e. safety, testing, qualification of site manager etc.</li> </ul>
3	WPE	<ul style="list-style-type: none"> <li>In evaluation sheet, safety management only accounts for 10%. When we work with foreign contractors or foreign project owners, labor safety is an important issue. I hope that your study can increase grade for safety, which will be comply with international practice and pay more attention to labor. (JSC)</li> </ul>	<ul style="list-style-type: none"> <li>Percentages for items in the evaluation sheet can be changed anytime. In Japan, we consider percentage of each item every year and make a suitable change. I think Viet Nam can apply the same way. We will have further discussion with CAMA on this issue.</li> </ul>
4	EM/SM	<ul style="list-style-type: none"> <li>I totally agree with you on the improvement of grade in regard of technical aspect for contractor or tender selection. Recently in Viet Nam we focus much on the price that mostly bidder of the lowest price is selected. This may lead to the unsecured quality and unsafety of the construction works. (JSC)</li> </ul>	<ul style="list-style-type: none"> <li>Thank you for your understanding.</li> </ul>

#	Question/Comment	Answer
5	EM/SM <ul style="list-style-type: none"> <li>I have a comment for slide 20. I used to work in Japan for 20 years and I understand this system very well. I think we should mention that this evaluation is in relation with technical proposal for particular project. And we should mention that this evaluation is for proposal for contractors. My question is who will evaluate such kind of proposal because if we propose something new and advanced there should be experts to evaluate it. I would recommend that we should raise the role of State Acceptance Council. (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>One of the most important points of this kind of evaluation is capacity of project owner. For normal package, professional PMU may be able to evaluate itself. In the case of one-time PMU or small PMU, consultants should be hired for evaluation. For high technical projects or advanced projects, I think outside experts should be hired as your suggestion. We will have further discussion with counterparts of MOC.</li> </ul>
6	EM/SM <ul style="list-style-type: none"> <li>I totally agree with proposal regarding general evaluation. There are incapable contractors which would cause many accidents or poor quality control, however POs must select contractors basing on price and there are no reason to reject such kind of contractor. If the evaluation is applied, we may be able to eliminate bad contractors and select good contractors despite the fact that the price may be a little bit higher. (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>Thank you for your understanding.</li> </ul>
7	EM/SM <ul style="list-style-type: none"> <li>I used to submit tender document in Japan and I know that it is very complicated so I would suggest that for final proposal you should give one or two examples about bridge project or tunnel project for easier understanding. (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>We will prepare an example for the Evaluation document.</li> </ul>
8	Relation between EM and SM <ul style="list-style-type: none"> <li>Before starting the study on WPE, have you studied consistency or inconsistency between Law on construction and Bidding Law? The Decree 59 states about evaluation method for entity certificate (qualification certificate). After that, at the tender stage, the tender document from project owner requires many evidences that they have to re-evaluate experience and capacity of bidders. It is therefore overlapping. (THIKECO)</li> </ul>	<ul style="list-style-type: none"> <li>We reviewed not only Construction Law series but also Bidding Law. One finding is that project classification in the Decree 59 is not used for tender-method selection in Bidding Law.</li> <li>All countries have evaluation stage and tender stage. Evaluation stage is to evaluate total capacity of contractor while evaluation at tender is to evaluate how suitable the contractor is for the package so it's normal.</li> <li>In Viet Nam, Law on Tender is prepared and managed by the Ministry of Planning and Investment (MPI). This Law on Tender is applied for all types of procurement including construction. However, construction procurement is quite special that experts propose that the construction tender should be under management of MOC. If we can do that, evaluation of contractor capacity and evaluation during tender stage can be somehow integrated and thus, number of evidence documents can be reduced for both POs and contractors.</li> </ul>

**Output 5 Draft Guideline on Contract Management and Contract Alteration (GLCM)**

#		Question/Comment	Answer
1	Training & FIDIC contract	<ul style="list-style-type: none"> <li>We think that FIDIC contract is not popular enough in Viet Nam and since GLCM has been compiled based on the comparison between Viet Nam regulations and FIDIC contract, do you have any plan to disseminate FIDIC contract in the CCQS Project? (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>I agree with you that FIDIC contract is not disseminated sufficiently in Viet Nam. I suppose efforts shall be done in this regard.</li> <li>We have plans to disseminate GLCM in two ways in the CCQS Project. <ul style="list-style-type: none"> <li>- Training seminar will be taken place in June and November / December this year to disseminate the outputs in the CCQS Project.</li> <li>- Training program and seminar materials for GLCM will be compiled and delivered to MOC, AMC in particular, so that training course for GLCM will be continued in AMC after the Project.</li> </ul> </li> </ul>
2	Contract alteration	<ul style="list-style-type: none"> <li>In my experiences of ODA project in Viet Nam, there are some problems on evaluation of additional works, such as it takes long time and evaluation price is often insufficient for contractors because of the difference of cost estimation method between Vietnamese regulation and international practice. Do you have any ideas to overcome these problems? (OCAJI)</li> </ul>	<ul style="list-style-type: none"> <li>Cost estimation method in Viet Nam has not been updated for long time and is being discussed in Output 3. In the dialogue in April last year, guideline on cost estimation for indirect construction works was presented and discussed. That for direct construction works is being studied and guideline on that will be compiled in Output 3.</li> <li>[Dr. Khanh] In the CCQS project, we have completed study on cost estimation for indirect work and now cost estimation for direct work is in review to adopt Vietnamese regulation to market mechanism. The main problem lies on the construction norm system. Therefore we are preparing to establish a new cost norm system. Then, in addition to FIDIC contract, we are planning to develop a standard contract condition for Viet Nam.</li> </ul>
3	FIDIC contract	<ul style="list-style-type: none"> <li>I know several projects in Viet Nam use FIDIC contract. Do you think FIDIC contract can be applicable in Viet Nam? (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>We recommend to improve contract management in Viet Nam by incorporating FIDIC concept but it will take some time to adopt GLCM in Viet Nam. I suppose that FIDIC contract needs to be customized to Viet Nam situation, since most stakeholders in Viet Nam are familiar with the Viet Nam Regulations, which is different from FIDIC contract.</li> </ul>
4	Training	<ul style="list-style-type: none"> <li>Today topics (evaluation of engineering capacity, selection mechanism and contract management and alteration) shall be disseminated more to PO/PMU side. Do you have any plan for this purpose in the CCQS Project? (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>We agree with you that the topics shall be explained to PO / PMUs as well. In this regard, training workshops will be held in June and November / December this year inviting all stakeholders and we will discuss with ICD (organizer of workshops) to invite more POs / PMUs.</li> </ul>
5	Contract alteration	<ul style="list-style-type: none"> <li>I agree with you that additional works shall be commenced immediately after instruction of additional works is given. I wonder whether this practice is able to apply any time and I like to have your view. (VECAS)</li> </ul>	<ul style="list-style-type: none"> <li>In order to apply our recommendation (additional works shall be commenced immediately and evaluation be done later), there are two important points. <ul style="list-style-type: none"> <li>- Regulations in Viet Nam (relevant decree &amp; circular) shall be revised.</li> <li>- PO/PMUs, consultants and contractors shall be more competent and fair in evaluating and submitting additional costs of additional works.</li> </ul> </li> </ul>

**Others**

#	Question/Comment	Answer
General/Common		
1	<ul style="list-style-type: none"><li>It is recommended to send English version of documents. (VACC)</li></ul>	<ul style="list-style-type: none"><li>It was noted.</li></ul>
2	<ul style="list-style-type: none"><li>It seems helpful to receive the voice of contractors. (VJU)</li></ul>	<ul style="list-style-type: none"><li>We expect that it will be helpful for contractors.</li></ul>
3	<ul style="list-style-type: none"><li>More enterprises and experts should be invited to the dialogue. Experts will help participants to understand comprehensively about issues. (VJU)</li></ul>	<ul style="list-style-type: none"><li>We expect that MOC will continue the dialogue with constructions industry for the future.</li></ul>

## **Chapter 12 Public Relations**

### **12.1 Outline of Public Relations**

#### **(1) Purpose**

The purpose of public relations of the Project is to distribute information of the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project) on the entire country of Viet Nam. The Project is funded by Japan International Cooperation Agency (JICA) and executed jointly with the Ministry of Construction (MOC). In particular, the training workshops, which the Project team holds regarding the standard plan for quality and safety management (Output 1 & 2), the cost estimation guideline for indirect construction contractor works (Output 3), the evaluation method on engineering capacity of construction contractors (Output 4) and the guideline on contract management and contract alternation of construction contractor works (Output 5) as well as additional output documents such as the guideline for quality supervision and inspection for state authorities (SAs) & project owners (POs) / project management units (PMUs), the standard plan for environment management, the guideline for safety and environmental inspection for SAs & POs / PMUs, and the cost estimation guideline for direct construction contractor works, should be distributed through MOC official website, JICA official website, CCQS Project official website and local medias for dissemination.

The Project team has the responsibility to disseminate information regarding the CCQS Project to the Vietnamese, as well as the Japanese public.

#### **(2) Basic Policy**

As activities and outputs in CCQS Project have effect on construction investment projects in Viet Nam in future, JICA expert in charge of public relations is assigned in the Project.

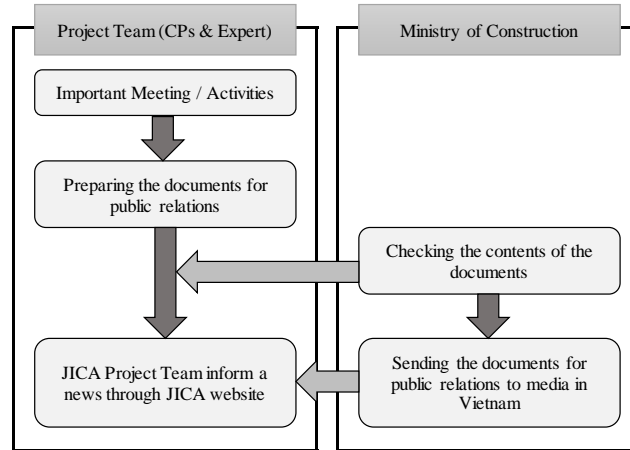
The materials and information for public relations are prepared by the Project team. After preparing materials, the Project Coordination Unit (PCU) or relevant departments check them and the Project team publicises the news of CCQS Project through target media.

#### **(3) Target Area**

The target area is whole Viet Nam and Japan.

#### **(4) Procedure**

The procedure of public relations is shown in Figure 12-1.



Source: Project team

**Figure 12-1 Procedure of Public Relations**

(5) Contents

The examples of public relations for media are described below. Contents are discussed in detail with relevant departments in MOC.

1) To inform the activities of each outputs

e.g.; the Meeting between MOC Project Preparation Members and the Project team was held to discuss the Project Design Matrix (PDM). The director general of International Cooperation Department (ICD) of Ministry of Construction mentioned that the indicators in PDM are important to get the achievements and proposed to discuss about those indicators in the meeting.

ICD, State Authority for Construction Economics (SACE), State Authority for Construction Quality Inspection (SACQI), Construction Activities Management Authority (CAMA) and Academy of Managers for Construction and Cities (AMC) attended the meeting on 4 August, 2015.

2) To inform the progress of the CCQS Project

e.g.; the CCQS Project has completed 1 year since its beginning. The Project team presented the progress of each Output.

Output 1: Quality Management (QM)

The main activities of Output 1 are to prepare the Quality Management Plan and to estimate the cost of QM. Those activities were finished and now C/Ps and JICA experts are reviewing the plans.

Output 2: Safety Management (SM)

(6) Schedule

The information of the CCQS Project is presented at the following intervals.

- 1) JSC meeting (every 6 months)
- 2) Project news, major events (average in every 3 months)
- 3) Training workshops (total 3 times from second year)
- 4) Trainings in Japan (total 3 times)

**Table 12-1 Planned Schedule of Public Relations**

Year	Month	Contents
2015	May	-
	June	Kick off meeting
	July	-
	August	-
	September	-
	October	First JSC meeting
	November	Training in Japan
	December	-
2016	January	Progress news
	February	-
	March	-
	April	Second JSC meeting and First Dialogues
	May	-
	June	-
	July	Progress news
	August	-
	September	-
	October	Third JSC meeting
	November	First Training Workshops and Training in Japan
	December	First Training Workshops
2017	January	Progress news
	February	-
	March	Second Dialogues
	April	Fourth JSC meeting
	May	-
	June	Second Training Workshops
	July	Progress news
	August	-
	September	-
	October	Fifth JSC meeting
	November	Third Training Workshops
	December	Third Training Workshops
	2018	January
February		Training in Japan
March		-

Source: Project team

## 12.2 Activities

Activities implemented in the Project were announced through media and other means. The articles on training workshops in particular were distributed through local media (newspapers and broadcasts etc.).

In addition, website of MOC and website of JICA were utilized for announcements of the Project. The means and contents of public relations are shown in Table 12-2.

**Table 12-2 Means and Contents of Public Relations**

Means	Contents
Newspapers and HPs	Interviews from newspapers, when major activities, such as seminars etc. are taking place.
TVs & Radios	Interviews from TVs and radios for major events such as seminars etc.
Official website in MOC	Discuss with MOC staff in charge for web site, set-up of regular project information and update on their web site.
Official website of JICA	After First JSC meeting, information of CCQS Project was updated every 3 to 6 months.

Source: Project team

**12.2.1 Brochures**

The Project team prepared the CCQS Project brochure of A3 size for the public relations. The brochures written in Vietnamese, English and Japanese languages were distributed when training workshops were held and/or other occasions.

Some items in activities of the Project were changed from the beginning. Since the Project started, the brochure was updated 5 times including the additional activities, and the last revision was made after the Fourth JSC meeting in April 2017.

The distributed number of brochures was approximately 1,500, including training workshop participants during 3 years.

The brochure of CCQS Project is shown in Figure 12-2.

**Implementation Structure**

1) Implementation Agency: Ministry of Construction (MOC)  
 Vice Minister of MOC (Chairman)  
 Project Coordination Unit (PCU): Consisting of ICD/SACE/SACQI/CAMA/AMC  
 Chief Advisor, Expert Team (REI, C-NEXCO, MEX)  
 International Cooperation Department (ICD)  
 State Authority for Construction Economics (SACE)  
 State Authority for Construction Quality Inspection (SACQI)  
 Construction Activities Management Authority (CAMA)  
 Academy of Managers for Construction and Cities (AMC)

2) Joint Steering Committee: JICA, MOC, PCU, JSC, and relevant organizations.

3) Japan Input: JICA Vietnam Office, Embassy of Japan, MLTT of Japan.

4) Counterpart: CPMI, UNIVER 1 SACQING & Staff, UNIVER 2 SACQING & Staff, UNIVER 3 SACQING & Staff, UNIVER 4 CAMARNG & Staff, UNIVER 5 SACQING & Staff.

**Schedule**

Work Activities	Period	2011	2012	2013	2014
Activities for Quality Management					
Additional Activities for Quality Management					
Activities for Safety & Environment Management					
Additional Activities for Safety & Environment Management					
Activities for Cost Estimation					
Additional Activities for Cost Estimation					
Activities for Evaluation of Engineering					
Additional Activities for Evaluation of Engineering					
Activities for Contract Management					
Additional Activities for Contract Management					
Training Workshop					
Dialogue with Construction Industries					

**JICA CCQS Project Team Office**  
 Address: 4<sup>th</sup> Floor, Ministry of Construction, 37 Le Dai Hanh, Hai Ba Trung, Ha Noi  
 Tel: (84-4) 3976 0271 (ext. 457)  
 KEI: Katohira & Engineers International  
 C-NEXCO: Central Nippon Expressway Company Limited  
 MEX: Metropolitan Expressway Company Limited  
 Website of CCQS Project: <http://www.ccqsproject.com/en/>

SEP 2017-E

**Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects in Vietnam**

**Project Title:** Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects in Vietnam

**Target Area:** Whole Vietnam

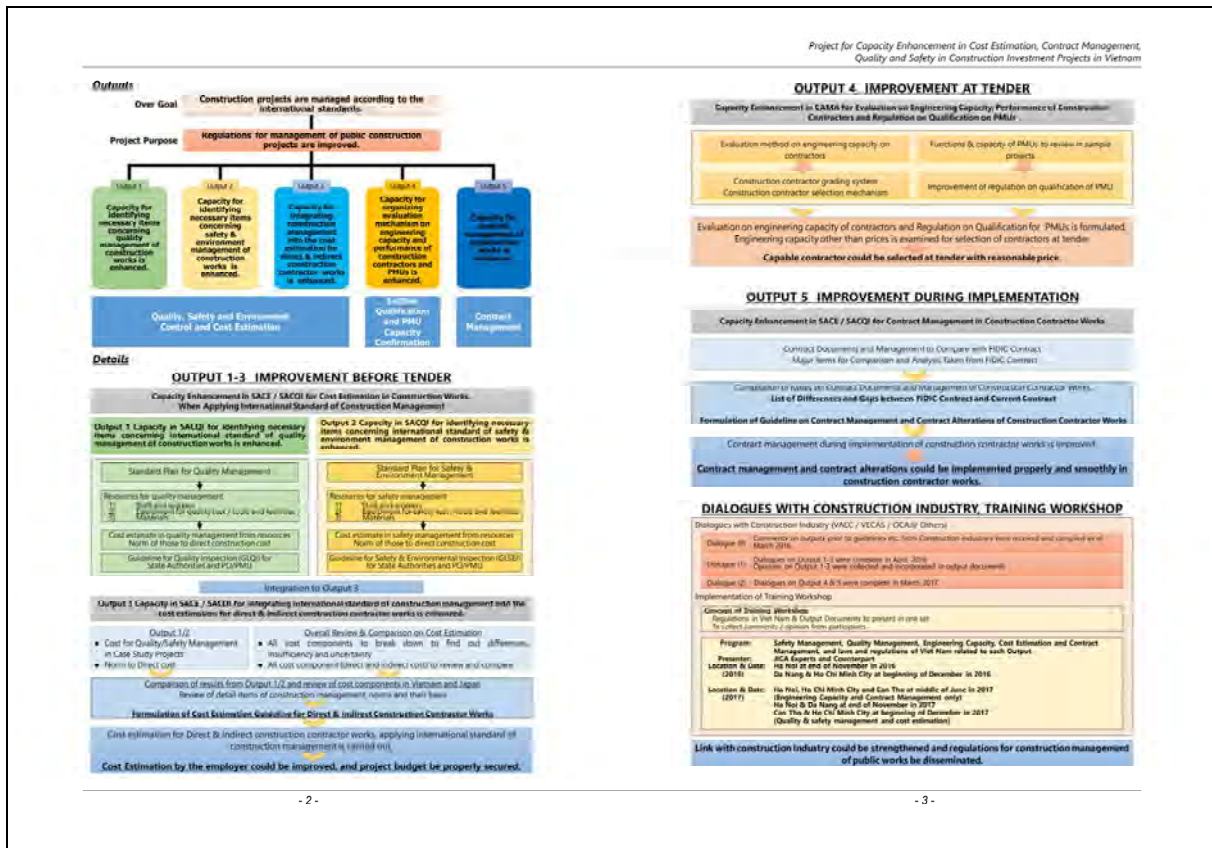
**Scheme:** Technical Cooperation

**Duration:** April 2015 ~ March 2018

**Background of the CCQS Project**

- Japan International Cooperation Agency (JICA) has implemented the technical cooperation project "The Project for Capacity Enhancement in Construction Quality Assurance" from May 2010 to December 2013.
- However, cost estimation and contract management affecting quality, safety and effectiveness in construction projects are still being carried out inadequately.
- According to the consideration as above, the Government of the Socialist of Viet Nam (GOV) requested JICA to run a technical cooperation project.
- Then, the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQSP) were formulated and being implemented as "Technical Cooperation Project of JICA."
- During the implementation of the CCQSP, additional activities were requested in Output 1, 2 & 3 and agreed in October 2016 to be carried out together.





Source: Project team

Figure 12-2 Brochure of CCQS Project

### 12.2.2 MOC Website

The MOC placed news of CCQS Project 6 times on their website. The website is written in Vietnamese language. The summary of MOC official website news is as follows.

- (1) The first occasion was for the meeting between Deputy Minister Bui Pham Khanh and the Project team on 26 May, 2015.

*On behalf of the Project team, Mr. Shoichi Takada, Chief advisor has a brief representation. CCQS Project has 5 Outputs and the Component Project Management Units (CPMUs) of each Output have been set up and play active role in the Project activities. The Project team has several detailed discussions with CPMUs for work plan finalization. This work plan shall be submitted to MOC at the beginning of June.*

*On behalf of Minister Trinh Dinh Dung, Mr. Bui Pham Khanh directly monitors and follows the Project. International Cooperation Department (ICD) plays coordinating role, Construction Economics Department (CED) is in charge of cost issues, State Authority of Construction Quality Inspection (SACQI) is in charge of quality issues, and Construction Activity Management Authority (CAMA) follows the construction issues. These are the main counterparts of the project. Beside these agencies, other related authorities (Technical Infrastructure Agency, Institute of Construction Economics (ICE). Academy for Managers of Construction and Cities (AMC)) are instructed to cooperate when necessary.*

*In this meeting, Deputy Minister Bui Pham Khanh agreed with the Project team in making further discussions with related agencies about work plan and holding kick-off meeting at the beginning of June.*

- (2) The second time was for the Kick-off meeting, attended by the Deputy Minister, members of JSC and the Project team on 11 June, 2015.

*In this meeting, representatives of relevant departments/organizations of Viet Nam side commented on modification of implementing schedules suitable with actual situation, on selection of case study projects which should be representative projects and can be used for all outputs together.*

*Presenting on work plan, representative from the Project team introduced details of Project Design Matrix (PDM), Project Outputs as well as Plan of Operation.*

*Representative of JICA Viet Nam Office also requested MOC to nominate Vietnamese C/P experts to join and co-work with JICA experts.*

*After obtaining concurrence on finalizing work plan, both side agreed to continue finalization of preparation for Project commencement.*

- (3) The third time was for site visit to Lai Chau Hydropower Plant Project from 9 to 11 December, 2015.

*Following the direction of MOC's Deputy Minister Bui Pham Khanh as regards the implementation of the "CCQS Project", from 9 to 11 December 2015, the delegation of MOC officials and JICA experts (Japan) led by Mr. Yamauchi Masafumi paid a site visit to Lai Chau Hydropower Plant and worked with Project Management Unit (PMU) of Son La Hydropower Plant (the employer of Lai Chau Hydropower Plant), General Contractor of Song Da Corporation about some items related to the Project.*

*Delegation of MOC officials and JICA experts is working with leaders of PMU of Son La Hydropower Plant.*

*At the site of Lai Chau Hydropower Plant, the delegation visited the dam body, plants, and observed the performance by the contractors at site. And then, the delegation visited the plant where LILAMA was installing the ROTO system for generating sets and preparing for non-load running of Generating Set No.1 by the end of December 2015.*

*The quality management process for Lai Chau Hydropower Plant is under the responsibility of Department of Engineering – Safety of PMU of Son La Hydropower Plant. This Department is in charge of managing and supervising quality, volume, and accepting work items. The construction coordination was carried out by Management Board of General Contractor through Department of Engineering and Construction at daily meetings with the attendance of all member contractors. All member contractors had their own quality management procedure ensuring the capability for performing their works.*

*Within the framework of the Project for "CCQS Project", site visits to case study projects such as to Lai Chau Hydropower Project will help experts of MOC and JICA to grasp actual and important information for their studies in order to work out outputs which help to improve the regulations on construction management in Viet Nam.*

- (4) The fourth time was the news regarding Second JSC meeting on 13 April, 2016.

*At the meeting, Deputy Minister said that CCQS Project is paid special attention by MOC. With the support from Japanese Embassy to Viet Nam, JICA, and relevant organizations, the Project has been implemented with certain achievements. However, during the implementation, the Project has faced some difficulties related to the legally administrative procedures which need the efforts of two sides for finalization.*

*The Project has been implemented with close cooperation between relevant departments of MOC and JICA experts. For Output 1, the Standard Plan for Quality Management (SPQM) was prepared, and Cost estimation of QM is being done. For Output 2, the Standard Plan for Safety Management (SPSM) was prepared, and Cost estimation of SM is being done. For Output 3, the guideline (GL) on the cost estimation for indirect construction contractor works was prepared, and preparation of draft circular for GL was commenced.*

Regarding the proposal to extend the Project study to direct cost, Mr. Yamamoto (Senior Representative in JICA Viet Nam Office) requested the Project team to keep on working with MOC side for further clarification. In case suitable expert and time could be arranged, JICA Viet Nam Office is willing to arrange budget for this item within the Project.

- (5) The fifth time was the news regarding Third JSC meeting on 12 October, 2016.

The report has showed results of each output, including study of relevant legal regulations and actual practices in Viet Nam comparing with practices in Japan and other countries in the region: Output 1 – improvement of quality management, Output 2 – improvement of safety management, Output 3 – improvement of cost estimation, Output 4 – improvement of work performance evaluation (WPE) of contractors and PMUs; and Output 5- improvement of contract management.

In the meeting, heads/deputy heads of relevant departments of the MOC have basically agreed on the report, proposals in the plan and implementation progress of activities of the Project team. Also in the meeting, some requests from the MOC side were proposed to JICA Viet Nam Office and for the Project team to study further including experience sharing about WPE basing on package performance result; establishing cost norm system, project management cost and standard construction contract.

Speaking at the meeting, Deputy Minister Bui Pham Khanh highly appreciated the Project team's efforts in implementing activities in accordance with the plan and preparing the meeting. Through the report of the Project team and comments of relevant departments of the MOC, Deputy Minister Bui Pham Khanh expressed his agreement on additional activities of Output 1, 2 and 3 and kindly requested JICA to pay its attention to requests related to safety and environment, cost for project management. Regarding Output 4 on qualification evaluation of contractors and PMUs, Deputy Minister Khanh also expressed his interest in WPE (grading) which will be basis to select contractors and the idea about project management bidding.

Speaking in the meeting, Mr. Kenichi Yamamoto, Senior Representative of JICA Viet Nam Office agreed with ideas and comments of Deputy Minister Bui Pham Khanh and meeting's members. For MOC's proposal, Mr. Kenichi Yamamoto said, JICA will consider and try to fulfill as much requests as possible in the third year of the Project (2017). For requests which are beyond framework of the Project in regard of time and resources, JICA will consider extension of the Project.

- (6) The sixth time was the news regarding Fifth JSC meeting on 18 October, 2017.

The Project wants to gain achievements that 1) after the Project completion, number of labor accidents which cause death will reduce 5% annually(3 years after the project), 2) AMC will be able to conduct training courses on "Quality management", "safety management", "cost estimation", "engineering capacity evaluation of construction contractors" and "contract management" basing on the project's outputs. 3) The minimum number of training course is one course/year and more than 70 % of trainees will be able to pass examination. 4) It is expected that up to 12/2017, more than 50% of stakeholders related to the project such as consulting associations and contractors, researchers, etc. can recognize that the project's study will help management of construction projects to approach to international level, more than 50% of POs recognize that regulations related to management of public construction projects is approaching international level since implementation of the Project.

Deputy Minister Khanh said that the Project's outputs including contract management, quality and safety in construction investment projects, especially cost estimation will considerably help MOC to prepare and issue related regulations.

Deputy Minister Khanh highly appreciated results of the project's training workshops for construction management staff in Viet Nam, which helps to enhance their capacity in contract management and cost management.

Since it is important stage which Project's output documents are being finalized, Deputy Minister Khanh requested experts and related departments to pay time and efforts to complete them.

Mr. Shu Kitamura (Senior Representative of JICA Viet Nam Office) expressed his desire that the



Project's outputs will be considered to incorporate into regulation by MOC and Viet Nam government for practical use, helping Viet Nam to enhance its capacity in cost estimation, contract management, quality and safety in construction investment projects, which can be a basis for JICA to strengthen cooperation with MOC in new coming projects.

Pictures of the above mentioned meetings in MOC website are shown in Figure 12-3.



Source: Project team

**Figure 12-3 Pictures of Articles in MOC Website**

A list of CCQSP articles which were uploaded to the MOC website is shown in Table 12-3.

**Table 12-3 CCQSP Articles in MOC Website**

#	Date	Title
1	26 May 2015	Meeting between the Project team and Vice Minister
2	12 June 2015	Kick-off meeting
3	14 December 2015	Site visit to Lai Chau Hydropower Plant
4	14 April 2016	Second JSC meeting
5	13 October 2016	Third JSC meeting
6	19 October 2017	Fifth JSC meeting

Source: Project team

As the other news, First JSC meeting was held on 13 October, 2015. The journalist from Construction Newspaper (Báo Xây dựng) was there instead of a journalist from MOC. The article of First and Fourth JSC meeting were uploaded to the website of Construction Newspaper (Báo Xây dựng). Since Third JSC meeting, the MOC official website had not shown news related to the CCQS Project, but the news of Fifth JSC meeting was upload on 19 October, 2017.

### 12.2.3 JICA Website

#### (1) Publicly Visible Site of ODA

JICA Headquarter and the Project team prepared contents for the publicly visible site of ODA. The visible site of ODA contains basic information of CCQS Project, such as introduction, duration and type of project.

#### (2) Website of Introduction of Technical Cooperation Project

The website of JICA for technical cooperation project was opened from 3 April 2017. This website contains more detailed information, such as outline, counterparts, background, project purpose, activities, outputs, inputs, project news among others.

The list of articles on CCQS project activities is shown in Table 12-4.

**Table 12-4 List of Articles on CCQS Project Activities**

#	Date	Title
1	11 June 2015	Kick-off meeting
2	13 October 2015	First JSC meeting
3	15 November to 28 November 2015	First Training in Japan
4	9 December to 11 December 2015	Site visit to Lai Chau Hydropower Plant
5	13 April 2016	Second JSC meeting
6	19 April to 21 April 2016	First Dialogues with Vietnamese Construction Industry
7	12 October 2016	Third JSC meeting
8	6 November to 19 November 2016	Second Training in Japan
9	25 November 2 and 8 December 2016	First Training Workshops
10	10 March 2017	Second Dialogues
11	12 April 2017	Fourth JSC meeting
12	25 April 16 to 18 May 2017	Expense Trend Survey
13	14 May 2017	APEC Dialogue 2017 on Sustainable Urbanization
14	16, 22 and 23 June 2017	Second Training Workshops
15	18 October 2017	Fifth JSC meeting
16	17, 24, 30 November and 1 December 2017	Third Training Workshops

Source: Project team

(3) Network of JICA Viet Nam Office for Public Relations

JICA Viet Nam Office has the network of local newspaper companies and utilizes SNS like “Facebook”. CCQS Project utilized this network for First Training Workshops in November and December 2016, Second Training Workshops in June 2017 and Third Training Workshops in November and December 2017 effectively. Journalists of MOC website were difficult to attend its meeting fully because the Training Workshop was held in Hanoi and 2 or 3 places including Ho Chi Minh City (HCM City) and Da Nang and / or Can Tho.

The public relations of First, Second and Third Training Workshops were collaborated with JICA Viet Nam Office. The press release was prepared by the Project team and JICA Viet Nam Office sent it to the related journalist for First Training Workshops at 3 locations, Ha Noi, Da Nang and HCM City, for Second Training Workshops at 3 locations, Ha Noi, HCM City and Can Tho and for Third Training Workshop at 4 locations, Ha Noi, Da Nang, Can Tho and HCM City.

**12.2.4 Website of CCQS Project**

The Project team made a contract with private server to open CCQS Project official website. Some articles which were already published by MOC official website and Construction News Company were gathered and uploaded on CCQS Project official website. The website address is described on CCQS Project brochure only. The issue of this website that remains was how to spread through the public. Therefore, other media to disseminate CCQS Project website to the public is necessary. The Project team discusses this matter with MOC and JICA Viet Nam Office.

**12.2.5 Newspapers and Other Media**

(1) Mass Media

The Project team prepared the list of mass media. The list is shown in Table 12-5 for reference. The articles uploaded in general newspapers requires fee.

**Table 12-5 List of Mass Media**

#	Newspaper Name	Frequency	Circulation	Owner
<b>I. Most Popular General Newspaper</b>				
1	New Ha Noi/Hà Nội Mới	Daily	120,000	Ha Noi City Committee of the Party
2	Labor/Lao Động	Daily	230,000	Viet Nam General Confederation of Labor
3	People/Nhân Dân	Daily	220,000	Vietnamese Communist Party
4	Young People/Thanh Niên	Daily	460,000	Viet Nam Youth Federation
5	The Pioneer/Tiền Phong	Daily	150,000	HCM City Communist Youth Union
6	The Youth/Tuổi trẻ	Daily	450,000	HCM City Communist Youth Union
<b>II. Most Popular Online Newspaper</b>				
1	Vnexpress <a href="http://vnexpress.net/">http://vnexpress.net/</a>			FPT Corporation
2	People’s Knowledge <a href="http://dantri.com.vn/">http://dantri.com.vn/</a>			Central Study Encouragement Association
3	Vietnamnet <a href="http://vietnamnet.vn/">http://vietnamnet.vn/</a>			Ministry of Information and Communication
<b>III. Specialized Newspaper related to Project in Vietnamese</b>				
1	Construction Newspaper / Báo Xây dựng			MOC
2	Construction Magazine / Tạp chí Xây dựng			MOC
3	Transportation Newspaper / Báo GTVT			MOT
4	Transportation Magazine / Tạp chí GTVT			MOT
5	Const. Contractors and Construction Market Magazine / Tạp chí Nhà thầu và thị trường xây dựng			VACC

Source: Project team

(2) Construction Newspaper

Regarding the other media, the Project team had discussions with MOC. According to the Director General of ICD, the construction newspaper issued by MOC could be utilized effectively.

First, Second and Fourth JSC meeting were covered by the Construction Newspaper (Báo Xây dựng) on 14 October, 2015, 14 April, 2016 and 13 April, 2017.

After the above article, the article of dialogues with Vietnamese Construction Industry was covered on 21 April, 2016. On the other hand, the Construction Newspaper published the articles regarding the trend expense survey and expansion of the scope of CCQS Project.

A list of CCQS Project articles published by Construction Newspaper is shown in Table 12-6.

**Table 12-6 CCQS Project Articles in Construction Newspaper Website**

#	Date of Publishing	Title
1	14 October 2015	First JSC meeting
2	14 April 2016	Second JSC meeting
3	15 April 2016	JICA recommends Viet Nam to carry out expense trend survey
4	20 April 2016	MOC proposes to expand the scope of CCQS Project
5	21 April 2016	Dialogues with VECAS members on quality management, safety management and cost estimation
6	13 April 2017	Fourth JSC meeting
7	1 December 2017	Third Training Workshops

Source: Project team

(3) Newspaper Company List in First Training Workshops in November and December, 2016

The newspaper company list uploaded the articles regarding first training workshops in 2016 is shown in Table 12-7.

**Table 12-7 Company List Uploaded Articles regarding First Training Workshops**

No.	Media	Website	Location
1	Government News	<a href="http://baochinhphu.vn/Hoat-dong-Bo-nganh/Day-manh-hop-tac-quoc-te-ve-quan-ly-du-an-xay-dung/292544.vgp">http://baochinhphu.vn/Hoat-dong-Bo-nganh/Day-manh-hop-tac-quoc-te-ve-quan-ly-du-an-xay-dung/292544.vgp</a>	Ha Noi
2	Construction Newspaper	<a href="http://www.baodaydung.com.vn/news/vn/thoi-su/day-manh-hop-tac-quoc-te-ve-quan-ly-du-an-xay-dung.html">http://www.baodaydung.com.vn/news/vn/thoi-su/day-manh-hop-tac-quoc-te-ve-quan-ly-du-an-xay-dung.html</a>	
3	Bidding Newspaper	<a href="http://baodauthau.vn/dau-tu/cai-tien-he-thong-du-toan-chi-phi-xay-dung-29938.html">http://baodauthau.vn/dau-tu/cai-tien-he-thong-du-toan-chi-phi-xay-dung-29938.html</a>	
4	Viet Nam News	<a href="http://vietnamnews.vn/society/346949/construction-management-training-workshop-held-in-ha-noi.html#1vwZo7ATcgr0pB9d.97">http://vietnamnews.vn/society/346949/construction-management-training-workshop-held-in-ha-noi.html#1vwZo7ATcgr0pB9d.97</a>	
5	Communist Party of Viet Nam	<a href="http://dangcongsan.vn/kinh-te/hop-tac-viet-nhat-ve-tang-cuong-nang-luc-trong-du-an-dau-tu-xay-dung-417607.html">http://dangcongsan.vn/kinh-te/hop-tac-viet-nhat-ve-tang-cuong-nang-luc-trong-du-an-dau-tu-xay-dung-417607.html</a>	
6	Tendering	<a href="http://en.dangcongsan.vn/economics/enhancing-capacity-for-vietnamese-staff-on-construction-project-417714.html">http://en.dangcongsan.vn/economics/enhancing-capacity-for-vietnamese-staff-on-construction-project-417714.html</a>	
7	Nhan Dan (People) newspaper	<a href="http://en.nhandan.com.vn/society/item/4836902-national-volunteer-day-gathers-nearly-10-000-volunteers.html">http://en.nhandan.com.vn/society/item/4836902-national-volunteer-day-gathers-nearly-10-000-volunteers.html</a>	Da Nang
8	VietnamPlus	<a href="http://en.vietnamplus.vn/japan-helps-vietnam-improve-management-of-construction-projects/103666.vnp">http://en.vietnamplus.vn/japan-helps-vietnam-improve-management-of-construction-projects/103666.vnp</a>	
9	Bnews	<a href="http://bnews.vn/kiem-soat-doi-von-va-an-toan-lao-dong-trong-cac-du-an-xay-dung/30367.html">http://bnews.vn/kiem-soat-doi-von-va-an-toan-lao-dong-trong-cac-du-an-xay-dung/30367.html</a>	HCM City
10	News	<a href="http://baotintuc.vn/xa-hoi/siet-chat-an-toan-trong-xay-dung-20161208135612647.htm">http://baotintuc.vn/xa-hoi/siet-chat-an-toan-trong-xay-dung-20161208135612647.htm</a>	
11	Constructionnews	<a href="http://www.baodaydung.com.vn/news/vn/thoi-su/tiep-tuc-nang-cao-nang-luc-cua-can-bo-nganh-xay-dung.html">http://www.baodaydung.com.vn/news/vn/thoi-su/tiep-tuc-nang-cao-nang-luc-cua-can-bo-nganh-xay-dung.html</a>	

No.	Media	Website	Location
12	Dansinhnews	<a href="http://baodansinh.vn/nang-cao-quan-ly-cac-du-an-dau-tu-va-an-toa-n-lao-dong-trong-cac-du-an-xay-dung-d48695.html">http://baodansinh.vn/nang-cao-quan-ly-cac-du-an-dau-tu-va-an-toa-n-lao-dong-trong-cac-du-an-xay-dung-d48695.html</a>	
13	Thanhvien	<a href="http://thanhvien.vn/thoi-su/xay-dung-chiem-13-so-vu-tai-nan-772607.html">http://thanhvien.vn/thoi-su/xay-dung-chiem-13-so-vu-tai-nan-772607.html</a>	
14	Constructionnews	<a href="http://www.baoyaydung.com.vn/news/vn/thoi-su/diem-tin-812-tang-cuong-nang-luc-cua-can-bo-nganh-xay-dung.html">http://www.baoyaydung.com.vn/news/vn/thoi-su/diem-tin-812-tang-cuong-nang-luc-cua-can-bo-nganh-xay-dung.html</a>	

Source: Project team

(4) Newspaper Company List in Second Training Workshops in June, 2017

The newspaper company list uploaded the articles regarding second training workshops is shown in Table 12-8. Second training workshops were held in Ha Noi, HCM City and Can Tho. The 4 reporters for Ha Noi, 3 reporters for HCM City and 4 reporters for Can Tho came to the workshop venue.

**Table 12-8 Company List Uploaded Articles regarding Second Training Workshops**

No.	Media	Website	Location
1	Dang cong san (Communist Party of VN online Newspaper)	<a href="http://en.dangcongsan.vn/economics/training-workshops-on-management-of-construction-projects-442230.html">http://en.dangcongsan.vn/economics/training-workshops-on-management-of-construction-projects-442230.html</a>	Ha Noi
2	Quan Doi Nhan Dan	<a href="http://www.qdnd.vn/xa-hoi/tin-tuc/hoi-thao-dao-tao-ve-quan-ly-du-an-xay-dung-510108">http://www.qdnd.vn/xa-hoi/tin-tuc/hoi-thao-dao-tao-ve-quan-ly-du-an-xay-dung-510108</a>	
3	Thoi bao Ngan hang (Bank Times)	<a href="http://thoibaonganhang.vn/nang-cao-nang-luc-danh-gia-nha-thau-va-quan-ly-hop-dong-64227.html">http://thoibaonganhang.vn/nang-cao-nang-luc-danh-gia-nha-thau-va-quan-ly-hop-dong-64227.html</a>	
4	Vietnamnews	<a href="http://vietnamnews.vn/society/378495/project-helps-facilitate-construction-management.html#iJxDc6GWGUOrylRp.97">http://vietnamnews.vn/society/378495/project-helps-facilitate-construction-management.html#iJxDc6GWGUOrylRp.97</a>	
5	Dau thau (Procurement)	<a href="http://baodauthau.vn/dau-tu/jica-ho-tro-nang-cao-chat-luong-du-an-xay-dung-43285.html">http://baodauthau.vn/dau-tu/jica-ho-tro-nang-cao-chat-luong-du-an-xay-dung-43285.html</a>	
6	Tap chi tai chinh (Financial Magazine)	<a href="http://tapchitaichinh.vn/kinh-te-vi-mo/canh-tranh-quoc-gia/tang-cuong-nang-luc-ve-du-toan-chi-phi-quan-ly-cac-du-an-dau-tu-xay-dung-115654.html">http://tapchitaichinh.vn/kinh-te-vi-mo/canh-tranh-quoc-gia/tang-cuong-nang-luc-ve-du-toan-chi-phi-quan-ly-cac-du-an-dau-tu-xay-dung-115654.html</a>	HCM City
7	Dang cong san (Communist Party of VN online Newspaper)	<a href="http://www.dangcongsan.vn/preview/newid/442927.html">http://www.dangcongsan.vn/preview/newid/442927.html</a>	
8	VOV	<a href="http://vov.vn/kinh-te/can-co-he-thong-danh-gia-nang-luc-nha-thau-638583.vov">http://vov.vn/kinh-te/can-co-he-thong-danh-gia-nang-luc-nha-thau-638583.vov</a>	
9	Bao Xay dung (Construction Newspaper)	<a href="http://www.baoyaydung.com.vn/news/vn/kinh-te/danh-gia-nang-luc-nha-thau-de-nang-cao-chat-luong-xay-dung.html">http://www.baoyaydung.com.vn/news/vn/kinh-te/danh-gia-nang-luc-nha-thau-de-nang-cao-chat-luong-xay-dung.html</a>	
10	Bao cong thuong	<a href="http://baocongthuong.com.vn/tang-cuong-nang-luc-trong-quan-ly-du-an-dau-tu-xay-dung.html">http://baocongthuong.com.vn/tang-cuong-nang-luc-trong-quan-ly-du-an-dau-tu-xay-dung.html</a>	
11	Kinh te do thi	<a href="http://kinhtedothi.vn/can-co-he-thong-danh-gia-nang-luc-nha-thau-291199.html">http://kinhtedothi.vn/can-co-he-thong-danh-gia-nang-luc-nha-thau-291199.html</a>	
12	Dan sinh	<a href="http://baodansinh.vn/tang-cuong-nang-luc-ve-du-toan-chi-phi-quan-ly-hop-dong-cac-du-an-dau-tu-xay-dung-d59816.html">http://baodansinh.vn/tang-cuong-nang-luc-ve-du-toan-chi-phi-quan-ly-hop-dong-cac-du-an-dau-tu-xay-dung-d59816.html</a>	
13	Cong an nhan dan	<a href="http://cand.com.vn/doanh-nghiep/JICA-ho-tro-Viet-Nam-danh-gia-nang-luc-va-quan-ly-nha-thau-446778/">http://cand.com.vn/doanh-nghiep/JICA-ho-tro-Viet-Nam-danh-gia-nang-luc-va-quan-ly-nha-thau-446778/</a>	Can Tho
14	Dai bieu nhan dan	<a href="http://daibieunhandan.vn/default.aspx?tabid=75&amp;NewsId=391924">http://daibieunhandan.vn/default.aspx?tabid=75&amp;NewsId=391924</a>	
15	Vietnamplus	<a href="http://www.vietnamplus.vn/tim-giai-phap-tang-cuong-nang-luc-tro-ng-quan-ly-du-an-dau-tu-xay-dung/452798.vnp">http://www.vietnamplus.vn/tim-giai-phap-tang-cuong-nang-luc-tro-ng-quan-ly-du-an-dau-tu-xay-dung/452798.vnp</a>	
16	VOA	<a href="http://vov.vn/kinh-te/nhat-ban-giup-nang-cao-chat-luong-du-an-da-tu-xay-dung-tai-viet-nam-639141.vov">http://vov.vn/kinh-te/nhat-ban-giup-nang-cao-chat-luong-du-an-da-tu-xay-dung-tai-viet-nam-639141.vov</a>	

Source: Project team



(5) Newspaper Company List in Third Training Workshops in November and December, 2017

The newspaper company list uploaded articles for the training workshops is shown in Table 12-9. Third training workshops were held in Ha Noi, Da Nang, Can Tho and HCM City. 1 reporter for Ha Noi, 7 reporters for Da Nang, 2 reporters for Can Tho and 1 reporter for HCM City came to the workshop site.

**Table 12-9 Company List Uploaded Articles regarding Third Training Workshops**

No.	Media	Website	Location
1	Cong an nhan dan	<a href="http://cand.com.vn/Kinh-te/Tang-cuong-nang-luc-quan-ly-cac-du-an-dau-tu-xay-dung-cong-tai-Viet-Nam-466856/">http://cand.com.vn/Kinh-te/Tang-cuong-nang-luc-quan-ly-cac-du-an-dau-tu-xay-dung-cong-tai-Viet-Nam-466856/</a>	Ha Noi
2	Cong an nhan dan	<a href="http://en.cand.com.vn/Business/Training-workshops-on-management-of-construction-projects-466857/">http://en.cand.com.vn/Business/Training-workshops-on-management-of-construction-projects-466857/</a>	
3	Gia dinh Viet Nam	<a href="http://www.giadinhvietnam.com/jica-giup-vn-dao-tao-quan-ly-cac-du-an-dau-tu-xay-dung-d120560.html">http://www.giadinhvietnam.com/jica-giup-vn-dao-tao-quan-ly-cac-du-an-dau-tu-xay-dung-d120560.html</a>	
4	HTV	<a href="http://www.htv.com.vn/Trang/TinTuc/2017-11-16/jica-giup-vn-dao-tao-quan-ly-cac-du-an-dau-tu-xay-dung.aspx">http://www.htv.com.vn/Trang/TinTuc/2017-11-16/jica-giup-vn-dao-tao-quan-ly-cac-du-an-dau-tu-xay-dung.aspx</a>	
5	Vietnamnews	<a href="http://vietnamnews.vn/society/417767/jica-workshop-on-construction-projects.html#DDirObybgbAdf5m5.97">http://vietnamnews.vn/society/417767/jica-workshop-on-construction-projects.html#DDirObybgbAdf5m5.97</a>	
6	VTV	<a href="http://english.vtv.vn/news/jica-workshop-on-construction-projects-2017111921150161.htm">http://english.vtv.vn/news/jica-workshop-on-construction-projects-2017111921150161.htm</a>	
7	Dang Cong San	<a href="http://en.dangcongsan.vn/science-education/japanese-enhances-local-s-capacity-on-management-of-construction-projects-462406.html">http://en.dangcongsan.vn/science-education/japanese-enhances-local-s-capacity-on-management-of-construction-projects-462406.html</a>	
8	Vietnamplus	<a href="https://en.vietnamplus.vn/jica-workshop-on-construction-projects/121963.vnp">https://en.vietnamplus.vn/jica-workshop-on-construction-projects/121963.vnp</a>	
9	VOV	<a href="http://english.vov.vn/economy/jica-workshop-on-construction-projects-362853.vov">http://english.vov.vn/economy/jica-workshop-on-construction-projects-362853.vov</a>	
10	Bao Cong Thuong	<a href="http://baocongthuong.com.vn/jica-giup-viet-nam-nang-cao-hieu-qua-quan-ly-cac-du-an-dau-tu-xay-dung.html">http://baocongthuong.com.vn/jica-giup-viet-nam-nang-cao-hieu-qua-quan-ly-cac-du-an-dau-tu-xay-dung.html</a>	Da Nang
11	Nhan Dan	<a href="http://www.nhandan.com.vn/kinhte/thoi_su/item/34809902-tang-cuong-nang-luc-quan-ly-cac-du-an-dau-tu-xay-dung.html">http://www.nhandan.com.vn/kinhte/thoi_su/item/34809902-tang-cuong-nang-luc-quan-ly-cac-du-an-dau-tu-xay-dung.html</a>	
12	Giao thong van tai	<a href="http://www.tapchigiaothong.vn/jica-ho-tro-nang-cao-quan-ly-chat-luong-du-an-xay-dung-d52350.html">http://www.tapchigiaothong.vn/jica-ho-tro-nang-cao-quan-ly-chat-luong-du-an-xay-dung-d52350.html</a>	
13	Soc Trang Television	<a href="http://thst.vn/t/tang-cuong-nang-luc-quan-ly-cac-du-an-dau-tu-xay-dung-cong">http://thst.vn/t/tang-cuong-nang-luc-quan-ly-cac-du-an-dau-tu-xay-dung-cong</a>	Can Tho
14	Quochoitv.vn (Video)	<a href="http://quochoitv.vn/Videos/kinh-te-xa-hoi/2017/11/tang-cuong-nang-luc-quan-ly-cac-du-an-dau-tu-xay-dung-cong-tai-viet-nam-166718">http://quochoitv.vn/Videos/kinh-te-xa-hoi/2017/11/tang-cuong-nang-luc-quan-ly-cac-du-an-dau-tu-xay-dung-cong-tai-viet-nam-166718</a>	
15	Construction Newspaper	<a href="http://www.baodaydung.com.vn/news/vn/kinh-te/bo-xay-dung-va-jica-to-chuc-hoi-thao-dao-tao-ve-quan-ly-du-an-xay-dung.html">http://www.baodaydung.com.vn/news/vn/kinh-te/bo-xay-dung-va-jica-to-chuc-hoi-thao-dao-tao-ve-quan-ly-du-an-xay-dung.html</a>	HCM City

Source: Project team

As a supplement to explain the articles of First Training Workshops, JICA Viet Nam Office invited the related journalists and some of them wrote the article regarding the Training Workshops based on the press release and other information to their website without coming to the workshop site. Therefore, some articles were not correct. However, after that JICA Viet Nam Office helped us to inform this problem. From Second Training Workshops, there was no incorrect information in their articles.

(6) Seminar at the National University of Civil Engineering in November 2015

The Project team conducted a presentation in the seminar at the National University of Civil Engineering on 30 November 2015.

In relation to the Project's background, the university was looking for Japanese presenters to

share information on Japanese technology. This university is holding seminars several times per year. The objective of the seminars at this university is to present the Japanese technology, as well as construction conditions in Viet Nam.

The presentation was implemented in Japanese with simultaneous translation to Vietnamese, because most of the participants were Vietnamese or Japanese. The main participants were staffs of construction company, students of this university and the number of participants was about 100. It was good opportunity for public relations.

The pictures of this seminar are shown in Figure 12-4.



Source: Project team

**Figure 12-4 Pictures of Seminar in National University of Civil Engineering**

#### (7) Others

The news of Training in Japan was also disseminated through the SNS of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) of Japan, JICA desk in Japan and other agencies.

### 12.3 Recommendations and Lessons Learned

As having worked in CCQS Project as the Project team since April 2015 for three years, the followings are finding in the activities of public relations.

- ◆ MOC official website was used six times until October 2017.
- ◆ The objectively verifiable indicators of public relations was not set up and reviewed of measurement method.

Recommendations and lessons learned from the experiences in CCQS Project are stated below for future similar projects.

- ◆ The questionnaire survey for public and the stakeholders of the construction project such as representatives from the association of consultants and contractors, researchers/academies shall be conducted to have interested points on public relations.
- ◆ It is suggested that movie may be prepared and utilized in training workshops and distributed to the local newspaper companies to use MOC network for understanding and dissemination.
- ◆ Objectively verifiable indicators or other kind of figures may be set up such as utilizing more than X% of total local newspaper companies.

## Chapter 13 Training in Japan

### 13.1 Introduction

The counterpart training in Japan is planned as part of the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project). The purpose of training program is to enhance the capacity of cost estimation, contract management, and quality and safety management by lecture and inspection in Japan. This training will be held 3 times, in every year during the CCQS Project. The basic matters concerning the formulation of the training plan are as follows;

1. Consider not simply from the narrow viewpoint of all matters (cost estimation, contract management, and quality and safety management), but from wider perspective that includes construction management.
2. As for the lectures, consider not simply from the administrative viewpoint, but from wider perspective that includes construction management system operator and persons with relevant knowledge and experience.
3. As for the selection of site visits, consider not simply one kind, but many kinds of construction works.

**Table 13-1 Records of Training in Japan**

Training	Duration		Number of Participants
The 1 <sup>st</sup> Training	From 15 November 2015 to 28 November 2015	14 days	13
The 2 <sup>nd</sup> Training	From 06 November 2016 to 18 November 2016	14 days	15
The 3 <sup>rd</sup> Training	From 21 February 2018 to 03 March 2018	11 days	15

### 13.2 First Training in Japan

#### (1) Duration

The duration of the 1<sup>st</sup> training in Japan was from 15 November to 28 November (14 days).

#### (2) Contents

The purpose of training program is to enhance the capacity of cost estimation, contract management, and quality and safety management by lecture and inspection in Japan. The contents of the 1<sup>st</sup> training were as follows,

1. Cost Estimation
2. Contract Management
3. Quality Management
4. Safety Management
5. Supervision and Inspection
6. Evaluation of Construction Work
7. Maintenance of Infrastructure
8. Disaster prevention, emergency disaster control measures or disaster recovery efforts
9. Others (Urban planning, Road environment)

(3) Participants

The participants were the staff of counterparts, relevant departments and organizations, including Vietnam Association of Construction Contractors (VACC), Vietnam Engineering Consultant Association (VECAS).

International Cooperation Department (ICD), in charge of CCQS Project coordination selected 13 representatives from the organizations allocated as follows,

1. International Cooperation Department (ICD), MOC: 1 seat
2. Construction Economics Department (CED), MOC: 3 seats
3. State Authority of Construction Quality Inspection (SACQI), MOC: 3 seats
4. Construction Activities Management Authority (CAMA), MOC: 2 seats
5. Academy of Managers for Construction and Cities (AMC), MOC: 1 seat
6. Institute of Construction Economics (ICE), MOC: 1 seat
7. Vietnam Association of Construction Contractor (VACC): 1 seat
8. Vietnam Engineering Consultant Association (VECAS): 1 seat

Table 13-2 shows the list of participants.

**Table 13-2 List of Participants of First Training in Japan**

No.	Affiliated post	Occupation	Name
1. Leader	State Authority of Construction Quality Inspection, MOC	Deputy Director General	Mr. Le Quang
2. Sub Leader	Construction Activity Management Authority, MOC	Deputy Director General	Mr. Nguyen Chi Hieu
3.	Construction Economics Department, MOC	Deputy Director General	Mr. Taran Van Khoi
4.	State Authority of Construction Quality Inspection, MOC	Head of Labor Safety	Mr. Pham Duc Hinh
5.	International Cooperation Department, MOC	Senior Official	Ms. Do Nguyet Anh
6.	Construction Quality Inspection Division No.2 State Authority of Construction Quality Inspection, MOC	Deputy Head of Division	Mr. Le Dac Dinh
7.	Construction Activity Management Authority, MOC	Official	Mr. Pham Hoang Viet
8.	Construction Economics Department, MOC	Official	Mr. Phung Hung
9.	Construction Economics Department, MOC	Official	Mr. Vu Quoc Trong
10.	Strategy and Mechanism of Construction Economic Research, Construction Economics Institute, MOC	Deputy Head	Mr. Vu Quyet Thang
11.	Construction Management Department, Academy of Managers for Construction and Cities, MOC	Lecturer	Mr. Hoang Gia Trung
12.	Vietnam Association of Construction Contractors	Secretary General	Mr. Duong Van Can
13.	Vietnam Engineering Consultant Association	Deputy Manager of General Affair Office	Ms. Pham Thi Thu Hang

Source: Project team

(4) Lectures and Site Visit

1) Lectures

The lectures compose the contents of cost estimation, contract management, quality and safety management, also including construct management and reconstruction from the Great East Japan Earthquake.

All lecturers used Japanese language, and an interpreter was present at all lectures. Vietnamese texts were prepared by Japan International Cooperation Agency (JICA) Tokyo in advance.

Table 13-3 shows the list of lectures.

**Table 13-3 List of Lectures of First Training in Japan**

	Contents	Lecturer			Remarks
		Affiliated post	Occupation	Name	
L1	Orientation	JICA Tokyo	-	Ms. Aiko INOUE	16 Nov. AM
L2	Construction Management (1)	MLIT* Engineering Affairs Division	Director for Project Appraisal and Preventive Maintenance	Mr. Yugo MASUYA	16 Nov. PM
L3	Construction Management (2)	National Institute for Land and Infrastructure Management, MLIT	Director	Mr. Kazushi FURUMOTO	
L4	Construction Management (3)	JSCE (Japan Society of Civil Engineers) Kochi University of Technology	D.Eng. Associate Professor	Mr. Takashi GOSO	25 Nov. PM
L5	Cost Estimation	Kanto Regional Development Bureau, MLIT Engineering Management Division	Deputy Director	Mr. Yoshikazu KAIZU	17 Nov. AM
L6	Quality Management	Kanto Regional Development Bureau, MLIT	Deputy Director for Construction	Mr. Susumu TAKAHASHI	17 Nov. PM
L7	Safety Management	Engineering Affairs Division			
L8	Supervision and Inspection	Kanto Regional Development Bureau, MLIT Engineering Management Division	Deputy Director	Mr. Norio NOBE	
L9	Contract Management	Kanto Regional Development Bureau, MLIT Contract Division	Subsection Chief	Mr. Hidenori KASHIMA	18 Nov. AM
		Kanto Regional Development Bureau, MLIT Engineering Affairs Division	Deputy Director for Construction	Mr. Tomoyuki KOSAWA	
L10	Contract System	JACIC (Japan Construction Information Center) Management and Planning Department	Director	Mr. Satoshi IYAMA	25 Nov. AM
		JACIC (Japan Construction Information Center) CORINS/TECRIS Center	Director	Mr. Hitoshi NISHIMAKI	
L11	The Great East Japan Earthquake and Reconstruction	Tohoku Regional Development Bureau, MLIT	Senior Officer for General Affairs	Mr. Keisuke INOUE	24 Nov. AM
L12	Discussion and Evaluation	JICA HQ	Deputy Director	Mr. Naoki MINE	27 Nov.

Note: MLIT\* means “the Ministry of Land, Infrastructure, Transport and Tourism (Japan)”

Source: Project team

2) Site Visit

Site visit composes many kinds of construction, such as river work, road, sewerage, office building and reconstruction from the Great East Japan Earthquake, also including the site from the point of maintenance of infrastructure, disaster prevention, urban planning and road environment.

All guides used Japanese language, and an interpreter was present at all site visits. Vietnamese texts were prepared by JICA Tokyo in advance.

Table 13-4 shows the list of site visit.

**Table 13-4 List of Site Visit of First Training in Japan**

	Site	Attendant		Remarks
		Organization	Place	
S1	River works (Construction Management at river construction site)	Arakawa-Karyu River Office Kanto Regional Development Bureau, MLIT	Edogawa Ward Tokyo	18 Nov. PM
S2	Tokyo-Bay Tunnel (Construction Management at road construction site)	Kawasaki Road Office Kanto Regional Development Bureau, MLIT	Shinagawa Ward Tokyo	19 Nov. PM
S3	New-Tomei Expressway (Construction Management at road construction site)	Central Nippon Expressway Company Ltd. Atsugi-Branch	Isehara City, Kanagawa Pref.	26 Nov. AM
S4	Setagaya Regional Joint Government Office Building (Construction Management at building construction site)	Koubu Government Building Office Kanto Regional Development Bureau, MLIT	Setagaya Ward Tokyo	20 Nov. PM
S5	Oowada Pump Station (Construction Management at sewerage construction site)	Japan Sewage Works Agency	Ichikawa City Chiba Pref.	20 Nov. AM
S6	Miyagase-Dam (River control and Maintenance of Infrastructure)	Sagami-river Basin Water Management Office Kanto Regional Development Bureau, MLIT	Sagamihara City Kanagawa Pref.	26 Nov. PM
S7	Rainbow Bridge (Maintenance of Infrastructure)	Metropolitan Expressway Company Ltd.	Minato Ward Tokyo	19 Nov. AM
S8	Ohashi-Junction (Urban planning and road environment)	Metropolitan Expressway Company Ltd.	Meguro Ward Tokyo	25 Nov. PM
S9	Tokyo Rinkai Disaster Prevention Park (Disaster prevention)	Showa Memorial Park Office Kanto Regional Development Bureau, MLIT Cabinet Office	Koto Ward Tokyo	19 Nov. PM
S10-1	The Great East Japan Earthquake and reconstruction projects	Kitakamikawa-Karyu River Office Tohoku Regional Development Bureau, MLIT	Ishinomaki City Miyagi Pref.	24 Nov. PM
S10-2		Higashi-matushima City Higashi Matushima Office for Support of Earthquake Disaster Reconstruction, Urban Renaissance Agency	Higashi-matushima City Miyagi Pref.	



Source: Project team

3) Schedule

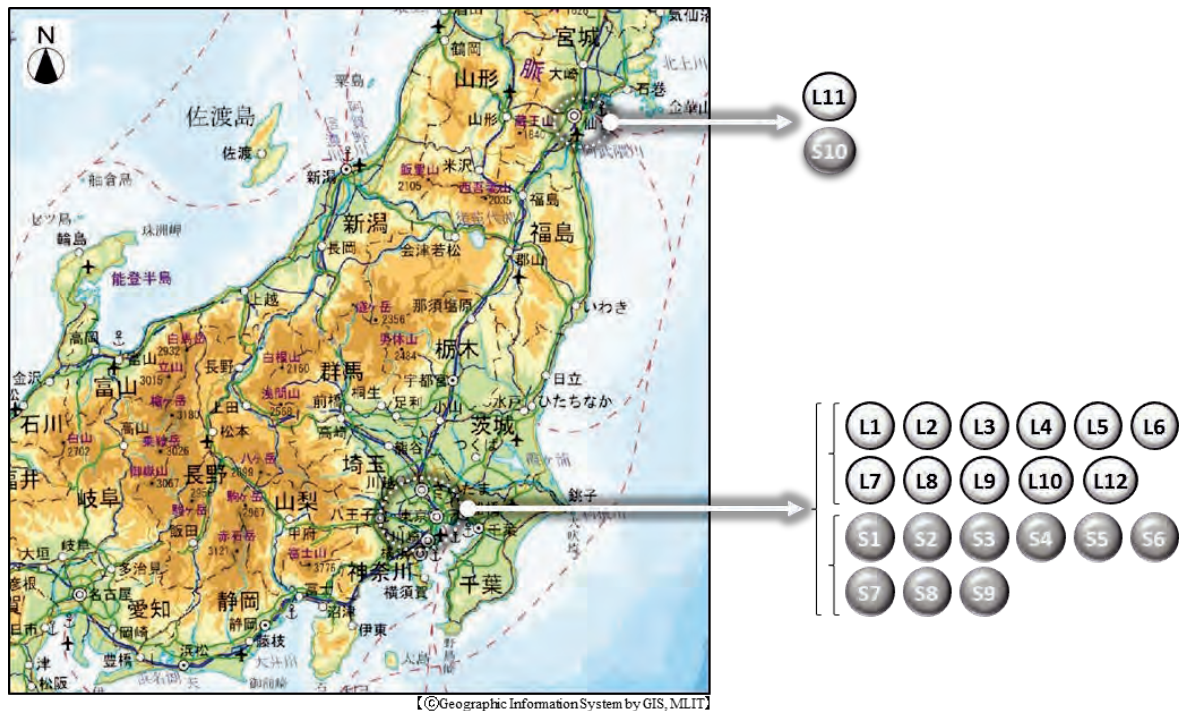
Table 13-5 shows the schedule of training and Figure 13-1 shows the location map of the 1<sup>st</sup> training in Japan.

**Table 13-5 Schedule of First Training in Japan**

No	Date		Content	Place	Stay
1	15-Nov. (Sun)	AM	【Hanoi (00:25) ⇒ ✈ [JL752] ⇒ Tokyo (NRT) (07:10)】 Tokyo (NRT) ⇒ 電車 ⇒ JICA-Tokyo	-	JICA-Tokyo
		PM	Preparation for Training	-	
2	16 Nov. (Mon)	AM	【L1】 Briefing / Orientation	JICA-Tokyo	JICA-Tokyo
		PM	【L2】 Construction Management (1) 【L3】 Construction Management (2)	MLIT	
			【Courtesy visit】 (*1)		
3	17 Nov. (Tue)	AM	【Courtesy visit】 (*2) 【L5】 Cost Estimation	Kanto Regional Development Bureau MLIT	JICA-Tokyo
		PM	【L6】 Quality Management 【L7】 Safety Management 【L8】 Supervision and Inspection		
			AM		
4	18 Nov. (Wed)	AM	【S1】 River works of Ara-River (Construction Management at river construction site)	Edogawa Ward Tokyo	JICA-Tokyo
		PM	【S7】 Rainbow Bridge (Maintenance of Infrastructure)	Minato Ward Tokyo	
5	19 Nov. (Thu)	AM	【S9】 Tokyo Rinkai Disaster Prevention Park (Disaster prevention)	Koto Ward Tokyo	JICA-Tokyo
		PM	【S2】 Tokyo-Bay Tunnel (Construction Management at road construction site)	Shinagawa Ward Tokyo	
			AM	【S5】 Oowada Pump Station (Construction Management at sewerage construction site)	
6	20 Nov. (Fri)	AM	【S4】 Setagaya Regional Joint Government Office Building (Construction Management at building construction site)	Setagaya Ward Tokyo	JICA-Tokyo
		PM	[ Day-off ]	-	
7	21 Nov. (Sat)	AM	[ Day-off ]	-	JICA-Tokyo
		PM	[ Day-off ]	-	
8	22 Nov. (Sun)	AM	[ Day-off ]	-	JICA-Tokyo
		PM	[ Day-off ]	-	
9	23 Nov. (Mon)	AM	(Move to Sendai-City)	-	Sendai City
		PM		-	
10	24 Nov. (Tue)	AM	【L11】 The Great East Japan Earthquake and Reconstruction	JICA Tohoku	JICA-Tokyo
		PM	【S10】 Reconstruction projects	Ishinomaki City Higashimatushima City Miyagi Pref.	
			(Move to Tokyo)	-	
11	25 Nov. (Wed)	AM	【L10】 Contract System	JACIC(*3)	JICA-Tokyo
		PM	【L4】 Construction Management (3)	JSCE(*4)	
			【S8】 Oohashi-Junction (Urban planning and road environment)	Meguro Ward Tokyo	

No	Date	Content		Place	Stay
12	26 Nov. (Thu)	AM	【S3】 New-Tomei Expressway (Construction Management at road construction site)	Isehara City Kanagawa Pref.	JICA- Tokyo
		PM	【S6】 Miyagase-Dam (River control and Maintenance of Infrastructure)	Sagamihara City Kanagawa Pref.	
13	27 Nov. (Fri)	AM	【L12】 Discussion	JICA-Tokyo	JICA- Tokyo
		PM	【L12】 Presentation / Evaluation	JICA-HQs	
14	28 Nov. (Sat)	AM		-	-
		PM	JICA-Tokyo⇒  ⇒Tokyo (NRT) 【Tokyo (NRT) (18:30)⇒  [JL752]⇒Hanoi(22:55)】	-	
Remarks		(*1): Assistant Vice-Minister for Engineering Affairs, Minister's Secretariat, MLIT (*2): Director-General for General Affairs, Kanto Regional Development Bureau, MLIT (*3) JACIC : Japan Construction Information Center (*4) JSCE : Japan Society of Civil Engineers			

Source: Project team



Source: Project team

Figure 13-1 Location Map of First Training in Japan



(5) Making the Report and Presentation by Participants

The Chief adviser requested participants (trainees) to make three kinds of reports, group discussion (preparation for presentation) and presentation as follows,

- ① The report of lectures (Two assigned trainees make a report, using Form No.1)
- ② The report of site visit (Two assigned trainees make a report, using Form No.1)
- ③ Completion report (Each trainee makes a report, using Form No.2)
- ④ Group discussion (preparation for presentation) and presentation
  - ⇒Group-1 (Cost estimation)
  - ⇒Group-2 (Contract & Evaluation of construction contractor)
  - ⇒Group-3 (Quality management)
  - ⇒Group-4 (Safety management)

Table 13-6 shows the sharing of report and presentation.

**Table 13-6 Sharing of Report and Presentation of First Training in Japan**

Trainee			① Report of Lectures	② Report of Site Visit	③ Completion Report	④ Group Discussion
1.	Le Quang/Mr	SAQCI	L2	S5, S6	○	G3
2.	Nguyen Chi Hieu/Mr	CAMA	L3	S4, L7	○	G2
3.	Taran Van Khoi/Mr	CED	L4	S3, S8	○	G1
4.	Pham Duc Hinh/Mr	SACQI	L5	SS, S9	○	G4
5.	Do Nguyet Anh/Ms	ICD	L6	S1, S10	○	G4
6.	Le Dac Dinh/Mr	SACQI	L7, L8, L11	—	○	G3
7.	Pham Hoang Viet/Mr	CAMA	L8, L9, L10	—	○	G2
8.	Phung Hung/Mr	CED	L7, L9	S9	○	G1
9.	Vu Quoc Trong/Mr	CED	L6, L10	S8	○	G2
10.	Vu Quyet Thang/Mr	ICE	L5, L10	S7	○	G1
11.	Hoang Gia Trung/Mr	AMC	L4	S1, S6	○	G4
12.	Duong Van Can/Mr	VACC	L3	S2, S5	○	G3
13.	Pham Thi Thu Hang/Ms	VECAS	L2	S3, S4	○	G4

Source: Project team

(6) Presentation by Participants

After group discussion in the morning of the last training day at JICA Tokyo, presentation was done at JICA HQ in the afternoon of the same day.

Table 13-7 shows the summary of presentation.

**Table 13-7 Summary of Presentation of First Training in Japan**

**Group-1; Cost estimation**

3. Construction Economics Department, MOC	Deputy Director General	Taran Van Khoi
<p>Methods for application in Viet Nam:</p> <ol style="list-style-type: none"> <li>1) In the coming time, besides Output 3 and 5, we will continue to improve, supplement general cost norm system.</li> <li>2) To build and manage the database system transparently for construction investment expenses management.</li> <li>3) To finalize the guideline on calculation method and procedure for overhead cost, cost for QM, SM.</li> <li>4) To continue to improve guideline on labor cost in line with the market.</li> <li>5) To improve Viet Nam's regulations and calculation procedure basing on FIDIC's provisions, other countries' regulations and Japan's experience.</li> </ol>		



**Group-2 : Contract & Evaluation construction contractor**

9. Construction Economics Department, MOC	Official	Vu Quoc Trong
<p>Basically, Viet Nam's types of contract and construction contractor evaluation have come close with international practices. However, one major difficulty in the implementation of the contract is the adjustment of the contract price. During this training, we have not received much information about price adjustment. From our point of view, price adjustment is affected by unsuitable cost estimation at early stages, information system on market price and other information related to construction work are not publicized and clear.</p> <p>In the coming time, we expect to improve cost estimation method and the capacity of cost estimation organizations.</p>		



**Group-3 : Quality management**

6. Construction Quality Inspection Division No.2 State Authority of Construction Quality Inspection, MOC	Deputy Head of Division	Le Dac Dinh
<ol style="list-style-type: none"> <li>1) A consistent legal system in all stages including survey stage, design stage, construction stage and official acceptance stage is necessary for good quality management (QM) of a construction project. We have found Japan's QM system, from MLIT to local levels, is also worth learning.</li> <li>2) In Japan all the stakeholders including project owners, supervisions and construction contractors apply the regulations on QM strictly. The application is also systematic.</li> <li>3) The strict and close supervision during construction period in all aspects including materials, manufacturing process and method statement. These three factors make up the quality of a construction project.</li> <li>4) To ensure the quality of a construction project, advanced construction technology, modern equipment, highly qualified and self-aware personnel are necessary.</li> <li>5) We were deeply impressed with the environmentally friendly quality management. We think that it is really worth learning and should be applied in Viet Nam.</li> </ol>		



**Group-4 : Safety management**

4. State Authority of Construction Quality Inspection, MOC	Head of Labor Safety	Pham Duc Hinh
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In Japan, SM at the site really impresses us while in Viet Nam this work just plays a small part.



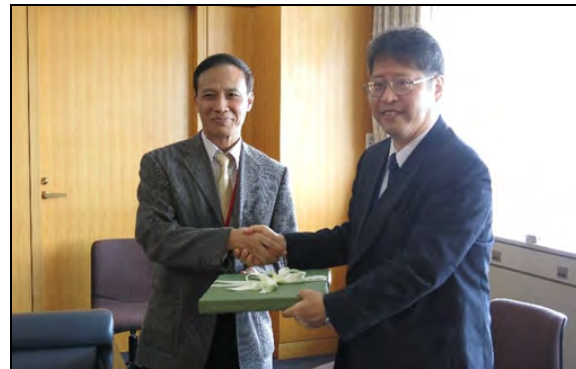
- 1) In Viet Nam, there are existing shortcomings in QM: increase in accidents, potential of risks. We have already issued labor safety and labor hygiene law. Construction law also has provisions to ensure safety and environmental hygiene but accidents still happen. One problem is that cost management in safety in Viet Nam is much different from Japan, especially cost management in safety for sub-contractors. In the coming time, we aim at improving and finalizing regulation on SM in construction. Specifically, we are about to issue regulation on labor safety in construction alone.
- 2) One common with Japan's regulation: the project owner (MLIT in Japan) takes charge in safety inspection. For Vietnamese side, contractors make method statement, then submit to project owners for approval before implementation. Supervisors take the responsibility in supervising the implementation of SM by contractors. Construction contractors carry out according to method statement after it is approved by the project owners.

Source: Project team

(7) Documentary Photographs



Courtesy Visit / 16 Nov. 2015  
Assistant Vice-Minister for Engineering Affairs,  
Minister's Secretariat, MLIT, Mr. T. IKEDA



Courtesy Visit / 17 Nov. 2015  
Director-General for General Affairs,  
Kanto Regional Development Bureau, MLIT  
Mr. G. YASUDA



Lecture (L2) / 16 Nov. 2015  
Engineering Affairs Division, MLIT  
Director for Project Appraisal and Preventive  
Maintenance, Mr. Y. MASAYA  
&

Lecture (L3) / 16 Nov. 2015  
Construction System Division, National Institute  
for Land and Infrastructure Management, MLIT  
Director, Mr. K. FURUMOTO



Lecture (L4) / 25 Nov. 2015  
JSCE (Japan Society of Civil Engineers)  
School of System Engineering, Kochi University  
of Technology  
D.Eng. Associate Professor, Mr. T. GOSO





Lecture (L5~9) / 17~18 Nov. 2015  
Kanto Regional Development Bureau, MLIT,  
Engineering Management Division  
Mr. Y. KAIZU & Mr. N. NOBE  
&  
Engineering Affairs Division  
Mr. S. TAKAHASHI & Mr. T. KOSAWA  
&  
Contract Division Subsection Chief  
Mr. H. KASHIMA



Lecture (L10) / 25 Nov. 2015  
JACIC (Japan Construction Information Center)  
Management and Planning Department,  
Director, Mr. S. IYAMA  
&  
CORINS/TECRIS Center,  
Director, Mr. H. NSHIMAKI



Lecture (L11) / 24 Nov. 2015  
Tohoku Regional Development Bureau, MLIT  
Senior Officer for General Affairs,  
Mr. K. INOUE



Site visit (S1) / 18 Nov. 2015  
Bank reconstruction (Edogawa Ward, Tokyo)  
Arakawa-Karyu River Office  
Kanto Regional Development Bureau, MLIT,



Site visit (S2) / 19 Nov. 2015  
Tokyo-Port Tunnel (Construction Site)  
(Shinagawa Ward, Tokyo)  
Kawasaki Road Office  
Kanto Regional Development Bureau, MLIT,



Site visit (S3) / 26 Nov. 2015  
New Tomei Expressway  
(Isehara City, Kanagawa Pref.)  
Central Nippon Expressway Co. Ltd.



Site visit (S4) / 20 Nov. 2015  
Setagaya Regional Joint Government Office  
Building (Setagaya Ward, Tokyo)  
Government Building Planning Division  
&  
Koubu Government Building Office  
Kanto Regional Development Bureau, MLIT,



Site visit (S5) / 20 Nov. 2015  
Oowada Pump Station  
(Ichikawa City, Chiba Pref.)  
Japan Sewage Works Agency, Kanto and  
Hokuriku General Office



Site visit (S6) / 26 Nov. 2015  
Miyagase Dam  
(Sagamihara City, Kanagawa Pref.)  
Sagami River Basin Water Management Office,  
Kanto Regional Development Bureau, MLIT



Site visit (S7) / 19 Nov. 2015  
Rainbow Bridge (Minato Ward, Tokyo)  
Metropolitan Expressway Company Ltd.



Site visit (S9) / 19 Nov. 2015  
Tokyo Rinkai Disaster Prevention Park  
(Koto Ward, Tokyo)  
Showa Memorial Park Office  
Kanto Regional Development Bureau, MLIT  
&  
Cabinet Office, Government of Japan  
Source: Project team



Site visit (S10-1) / 24 Nov. 2015  
Hiyoriyama Park  
(Ishinomaki City, Miyagi Pref.)  
Kitakamikawa Karyu River Office  
Tohoku Regional Development Bureau, MLIT



### **13.3 Second Training in Japan**

(1) Duration

The duration of the 2<sup>nd</sup> training in Japan was from 6 November to 19 November (14 days).

(2) Contents

The purpose of training program is to enhance the capacity of cost estimation, contract management, and quality and safety management by lecture and inspection in Japan. The contents of the 2<sup>nd</sup> training were as follows,

1. Quality Management
2. Safety Management
3. Cost Estimation
4. Contract Management Work
5. Supervision and Inspection
6. Evaluation of Construction Work
7. Maintenance of Infrastructure
8. Disaster prevention, emergency disaster control measures
9. Others (Environment)

(3) Participants

The participants were the staff of counterparts, relevant departments and organizations.

ICD, in charge of CCQS Project coordination selected 15 representatives from the organizations allocated as follows,

1. International Cooperation Department (ICD), MOC: 1 seat
2. Construction Economics Department (CED), MOC: 4 seats
3. State Authority of Construction Quality Inspection (SACQI), MOC: 3 seats
4. Construction Activities Management Authority (CAMA), MOC: 2 seats
5. Institute of Construction Economics (ICE), MOC: 2 seats
6. Information and Communication Office (ICO), MOC: 1 seat
7. Academy of Managers for Construction and Cities (AMC), MOC: 2 seats

Table 13-8 shows the list of participants.

**Table 13-8 List of Participants of Second Training in Japan**

No.	Affiliated post	Occupation	Name
1. Leader	Construction Activity Management Authority, MOC	Deputy Director General	Mr. Nguyen Anh Tuan
2. Sub Leader	Construction Economics Department, MOC	Deputy Director General	Ms. Truong Thi Thu Thanh
3.	State Authority of Construction Quality Inspection, MOC	Head of Construction Safety Division	Mr. Nguyen Tuan Ngoc Tu
4.	State Authority of Construction Quality Inspection, MOC	Senior Official	Mr. Nguyen The Anh
5.	State Authority of Construction Quality Inspection, MOC	Official of Construction Quality Inspection Division No.2	Mr. Le Truong Giang
6.	Construction Activity Management Authority, MOC	Deputy Head of Project Management Division	Mr. Nguyen Huu Hung
7.	Construction Economics Department, MOC	Associate Deputy Director General	Mr. Ha Duc Thang
8.	Construction Economics Department, MOC	Official	Ms. Bui Ngoc Lan
9.	Construction Economics Department, MOC	Official	Mr. Bui Thai Binh
10.	Information and Communication Office, MOC	Head of Office	Ms. Nguyen Thi Huong
11.	International Cooperation Department, MOC	Official	Mr. Nguyen Thanh Tung
12.	Strategy and Mechanism of Construction Economic Research, Construction Economics Institute, MOC	Deputy Director General	Mr. Nguyen Pham Quang Tu
13.	Strategy and Mechanism of Construction Economic Research, Construction Economics Institute, MOC	Head of Cost Research and Construction Market Division	Mr. Pham Huy Cuong
14.	Construction Management Department, Academy of Managers for Construction and Cities, MOC	Vice Rector	Mr. Nguyen Tien Hoi
15.	Construction Management Department, Academy of Managers for Construction and Cities, MOC	Official	Ms. Dang Thi Dinh Loan

Source: Project team

(4) Lectures and Site Visit

1) Lectures

The lectures compose the contents of cost estimation, contract management, quality and safety management, also including supervision and inspection.

All lecturers used Japanese language, and an interpreter was present at all lectures. Vietnamese texts were prepared by JICA Tokyo in advance.

Table 13-9 shows the list of lectures.

**Table 13-9 List of Lectures of Second Training in Japan**

	Contents	Lecturer			Remarks
		Affiliated post	Occupation	Name	
L1	Construction Management (1)	Engineering Affairs Division MLIT	Director for Project Appraisal and Preventive Maintenance	Mr. Yugo MASUYA	07 Nov. PM
L2	Construction Management (2)	National Institute for Land and Infrastructure Management, MLIT	Director	Mr. Kazushi FURUMOTO	
L3.1	Construction Management (3)	JSCE (Japan Society of Civil Engineers) Utsunomiya University	D.Eng. Professor	Mr. Satoshi YAMAOKA	17 Nov. AM
L3.2		JSCE (Japan Society of Civil Engineers) Tokyo Institute of Technology	D.Eng. Research Professor	Mr. Junji YOKOKURA	
L3.3		JSCE (Japan Society of Civil Engineers) Kochi University of Technology	D.Eng. Associate Professor	Mr. Takashi GOSO	
L4	Quality Management	Engineering Affairs Division Kanto Regional Development Bureau, MLIT	Deputy Director for Construction	Mr. Susumu TAKAHASHI	08 Nov. AM
L5	Safety Management				
L6	Cost estimation	Engineering Management Division Kanto Regional Development Bureau, MLIT	Deputy Director	Mr. Takehiko ISHIKAWA	09 Nov. AM
L7	Supervision and Inspection	Engineering Management Division Kanto Regional Development Bureau, MLIT	Deputy Director	Mr. Shinichi ASABA	
L8.1	Contract Management	Contract Division Kanto Regional Development Bureau, MLIT	Subsection Chief	Mr. Kenta HORIE	10 Nov. AM
L8.2		Engineering Affairs Division Kanto Regional Development Bureau, MLIT	Deputy Director for Construction	Mr. Tomoyuki KOSAWA	
L9.1	Contract System	JACIC (Japan Construction Information Center) Management and Planning Department	Deputy Director General	Mr. Masanori KOIDE	17 Nov. PM
L9.2		JACIC (Japan Construction Information Center) CORINS/TECRIS Center	Director	Mr. Naoki SUGIHARA	
L10	Discussion and Evaluation	Peace Building and Urban and Regional Development Division 1, JICA-HQ	Deputy Director	Mr. Ryoichi KAWABE	18 Nov PM.

Source: Project team



2) Site Visit

Site visit composes many kinds of construction, such as river work, dam, road, sewerage, office building, also including the site from the point of maintenance of infrastructure, disaster prevention, and environment.

All guides used Japanese language, and an interpreter was present at all site visits. Vietnamese texts were prepared by JICA Tokyo in advance.

Table 13-10 shows the list of site visit.

**Table 13-10 List of Site Visit of Second Training in Japan**

	Site	Attendant		Remarks
		Organization	Place	
S1	River works (Construction Management at river construction site)	Arakawa-Karyu River Office, Kanto Regional Development Bureau, MLIT	Edogawa Ward Tokyo	08 Nov. PM
S2	Yamba Dam (Construction Management at dam construction site)	Yamba-Dam Work Office, Kanto Regional Development Bureau, MLIT	Naganohara Town Gunma Pref.	15 Nov. PM
S3	Tokyo-Port Tunnel (Construction Management at road construction site)	Kawasaki Road Office, Kanto Regional Development Bureau, MLIT	Shinagawa Ward Tokyo	10 Nov. PM
S4	Trans-Chubu Expressway (Construction Management at road construction site)	Nagano Road Office, Kanto Regional Development Bureau, MLIT	Saku City Nagano Pref.	14 Nov. AM
S5	Asaka Public Employment Security Office Building (Construction Management at building construction site)	Tokyo Government Building Office -1, Kanto Regional Development Bureau, MLIT	Asaka City Saitama Pref.	16 Nov. PM
S6	Shin-Isogo Sewer pipe (Construction Management at sewerage construction site)	Yokohama City	Yokohama City Kanagawa Pref.	16 Nov. AM
S7	The Metropolitan Area Outer Underground Discharge Channel (River control and Maintenance of Infrastructure)	Edogawa River Office, Kanto Regional Development Bureau, MLIT	Kasukabe City Saitama Pref.	09 Nov. PM
S8	Neutralization Facility for strong acid river water (River control and Maintenance of Infrastructure)	Shinaki-Dam Water Quality Control Office, Kanto Regional Development Bureau, MLIT	Kusatsu Town Gunma Pref.	15 Nov. AM
S9	Rainbow Bridge (Maintenance of Infrastructure)	Metropolitan Expressway Company Ltd.	Minato Ward Tokyo	11 Nov. PM
S10	Tokyo Rinkai Disaster Prevention Park (Disaster prevention)	Showa Memorial Park Office, Kanto Regional Development Bureau, MLIT Disaster Management, Cabinet Office, Government of Japan	Koto Ward Tokyo	11 Nov. AM
S11.1	Sabo Dam (Volcanic Disaster Prevention) (Construction Management at Sabo Dam construction site)	Tone River Basin Sabo Office, Kanto Regional Development Bureau, MLIT	Tsumagoi Village Gunma Pref.	14 Nov. PM
S11.2	Tsumagoi Village Museum of History	Tsumagoi Village	Tsumagoi Village Gunma Pref.	14 Nov. PM
S12	Super Eco-Building (Environment)	SHIMIZU Co.,Ltd.	Chuo Ward Tokyo	08 Nov. PM

Source: Project team

3) Schedule

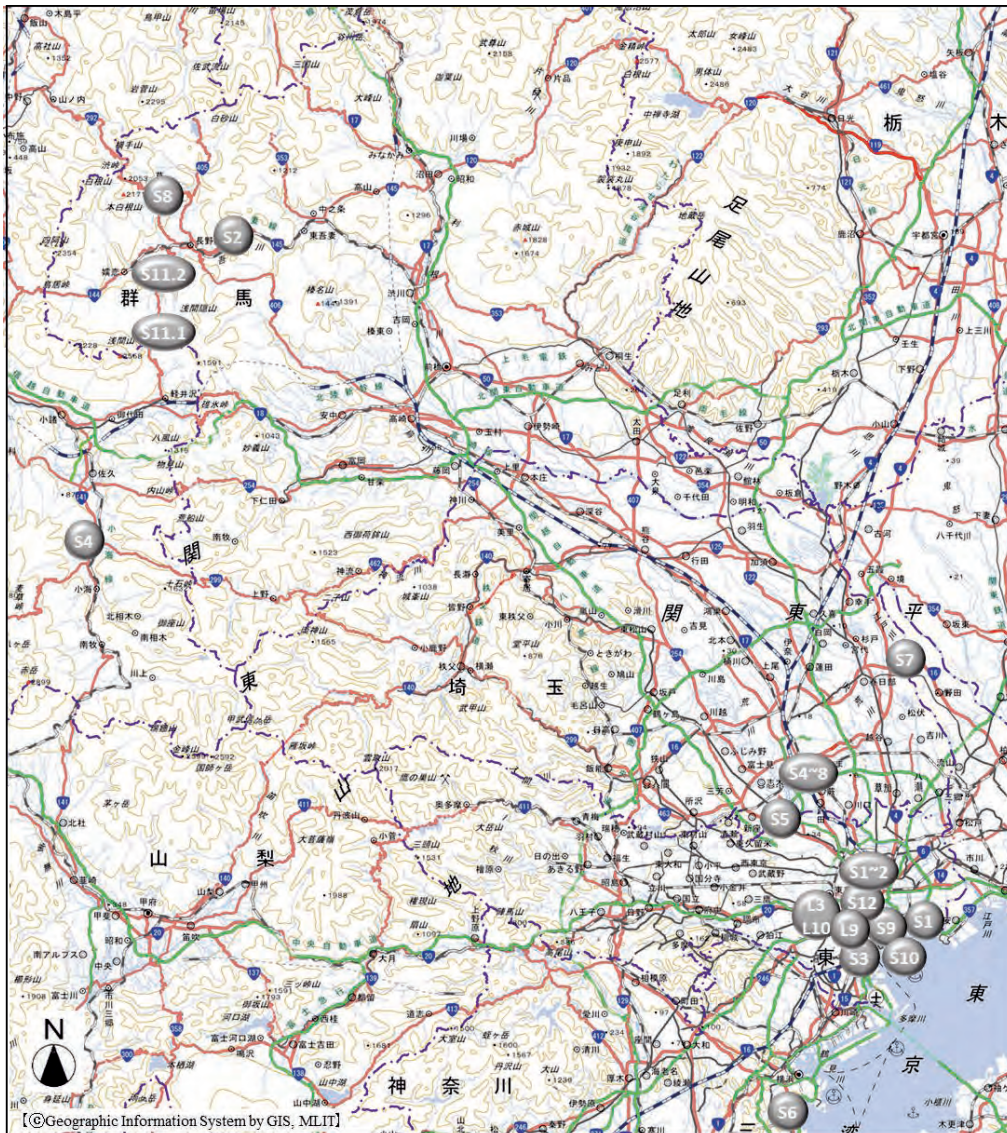
Table 13-11 shows the schedule of training and Figure 13-2 shows the location map of the 2<sup>nd</sup> training in Japan.

**Table 13-11 Schedule of Second Training in Japan**

No	Date		Content	Place	Stay
1	06 Nov. (Sun)	AM	Preparation for Training	-	JICA-Tokyo
		PM	Hanoi (15:40)⇒✈️[NH858]⇒Tokyo (HND) (22:15) Haneda Int'l Airport⇒🚆⇒JICA-Tokyo	-	
2	07 Nov. (Mon)	AM	Briefing / Orientation	JICA-Tokyo	JICA-Tokyo
		PM	【L1】 Construction Management (1) 【L2】 Construction Management (2)	MLIT	
			【Courtesy visit】 (*1)		
3	08 Nov. (Tue)	AM	【Courtesy visit】 (*2)	Kanto Regional Development Bureau MLIT	JICA-Tokyo
			【L4】 Quality Management 【L5】 Safety Management		
		PM	【S1】 River works of Ara-River (Construction Management at river construction site)	Edogawa Ward Tokyo	
4	09 Nov. (Wed)	AM	【L6】 Cost Estimation 【L7】 Supervision and Inspection	Kanto Regional Development Bureau MLIT	JICA-Tokyo
		PM	【S7】 The Metropolitan Area Outer Underground Discharge Channel (River control and Maintenance of Infrastructure)	Kasukabe City Saitama Pref.	
5	10 Nov. (Thu)	AM	【L8.1】 Contract Management 【L8.2】 Contract Management	Kanto Regional Development Bureau MLIT	JICA-Tokyo
		PM	【S3】 Tokyo-Port Tunnel (Construction Management at road construction site)	Shinagawa Ward Tokyo	
6	11 Nov. (Fri)	AM	【S9】 Tokyo Rinkai Disaster Prevention Park (Disaster prevention)	Koto Ward Tokyo	JICA-Tokyo
		PM	【S7】 Rainbow Bridge (Maintenance of Infrastructure)	Minato Ward Tokyo	
7	12 Nov. (Sat)	AM PM	[ Day-off ]	-	JICA-Tokyo
8	13 Nov. (Sun)	AM PM	[ Day-off ]	-	JICA-Tokyo
9	14 Nov. (Mon)	AM	【S4】 Trans-Chūbu Expressway (Construction Management at road construction site)	Saku City Nagano Pref.	Kusatsu Town
		PM	【S11.1】 Sabo-Dam (Volcanic Disaster Prevention) 【S11.2】 Tsumagoi Village Museum of History	Tsumagoi Village Gunma Pref.	
10	15 Nov. (Tue)	AM	【S8】 Neutralization facility for strong acid river water (River control and Maintenance of Infrastructure)	Kusatsu Town Gunma Pref.	JICA-Tokyo
		PM	【S2】 Yamba-Dam (Construction Management at dam construction site)	Naganohara Town Gunma Pref.	
11	16 Nov. (Wed)	AM	【S6】 Shin-Isogo Sewer pipe (Construction Management at sewerage construction site)	Yokohama City Kanagawa Pref.	JICA-Tokyo
		PM	【S5】 Asaka Public Employment Security Office Building (Construction Management at building construction site)	Asaka City Saitama Pref.	

No	Date	Content		Place	Stay
12	17 Nov. (Thu)	AM	【L3.1】Construction Management (3) 【L3.2】Construction Management (3) 【L3.3】Construction Management (3)	JICA-Tokyo (JSCE <sup>(*)1</sup> )	JICA-Tokyo
		PM	【L9.1】Contract System 【L9.2】Contract System	JACIC <sup>(*)2</sup>	
13	18 Nov. (Fri)	AM	Preparation for presentation	JICA-Tokyo	JICA-Tokyo
		PM	【L10】Briefing session of Training in Japan		
14	19 Nov. (Sat)	AM	JICA-Tokyo⇒⇒Haneda Int'l Airport Tokyo (HND) (08:55)⇒ [NH857]⇒	-	-
		PM	⇒Hanoi (13:10)	-	
Remarks		<sup>(*)1</sup> : Assistant Vice-Minister for Engineering Affairs, Minister's Secretariat, MLIT <sup>(*)2</sup> : Director-General, Kanto Regional Development Bureau, MLIT <sup>(*)3</sup> JACIC : Japan Construction Information Center <sup>(*)4</sup> JSCE : Japan Society of Civil Engineers			

Source: Project team



Source: Project team

Figure 13-2 Location Map of Second Training in Japan

(5) Making the Report and Presentation by Participants

The Chief adviser requested participants (trainees) to make three kinds of reports, group discussion (preparation for presentation) and presentation as follows,

- ① The report of lectures (Form No.1)
- ② The report of site visit (Form No.1)
- ③ Completion report (Form No.2)
- ④ Group discussion (preparation for presentation) and presentation
  - ⇒Group-1 (Safety management)
  - ⇒Group-2 (Quality management Contract)
  - ⇒Group-3 (Cost estimation)
  - ⇒Group-4 (Evaluation construction work)
  - ⇒Group-5 (Contract management)

Table 13-12 shows the sharing of report and presentation.

**Table 13-12 Sharing of Report and Presentation of Second Training in Japan**

Trainees			① Report of Lecture	② Report of Site Visit	③ Completion Report	④ Group Discussion
1.	Mr. Nguyen Anh Tuan	CAMA	L9.1	S7	○	G4
2.	Ms. Truong Thi Thu Thanh	CED	L1	S11.1	○	G3
3.	Mr. Nguyen Tuan Ngoc Tu	SAQCI	L2	S1	○	G2
4.	Mr. Nguyen The Anh	SAQCI	L4	S3	○	G3
5.	Mr. Le Truong Giang	SAQCI	L5	S5	○	G1
6.	Mr. Nguyen Huu Hung	CAMA	L9.2	S9	○	G5
7.	Mr. Ha Duc Thang	CED	L6	S2	○	G5
8.	Ms. Bui Ngoc Lan	CED	L8.1	S5	○	G2
9.	Mr. Bui Thai Binh	CED	L8.2	S6	○	G4
10.	Ms. Nguyen Thi Huong	ICO	—	S11.2 S12	○	G1
11.	Mr. Nguyen Thanh Tung	ICD	L10	S10	○	G5
12.	Mr. Nguyen Pham Quang Tu	ICE	L3.1	S8	○	G2
13.	Mr. Pham Huy Cuong	ICE	L3.2	S6	○	G3
14.	Mr. Nguyen Tien Hoi	AMC	L3.3	S4	○	G1
15.	Ms. Dang Thi Dinh Loan	AMC	L7	S2	○	G4

Source: Project team




(6) Presentation by Participants

After group discussion in the morning of the last training day, presentation was done in the afternoon at JICA Tokyo.


Table 13-13 shows the summary of presentation.

**Table 13-13 Summary of Presentation of Second Training in Japan**


**Group-1 : Safety management**

5. State Authority of Construction Quality Inspection, MOC	Official of Construction Quality Inspection Division No.2	Mr. Le Truong Giang
<ol style="list-style-type: none"> <li>1) MLIT can manage the detail quality of construction site due to legal condition and compliance.</li> <li>2) There are many new technologies of reducing human error in construction site. These are very helpful for current Viet Nam's construction industries.</li> <li>3) The laws reflecting the actual conditions of construction industry and market have established. The staffs of MLIT themselves are acutely conscious of the construction management with high level of engineering skill. We need to effort to foster and maintain sense of compliance among construction files.</li> <li>4) Public relations activities of MLIT are very active. As there are no similar activities in Vietnam, I feel necessity of this.</li> </ol>		


**Group-2 : Quality management**

3. State Authority of Construction Quality Inspection, MOC	Head of Construction Safety Division	Mr. Nguyen Tuan Ngoc Tu
<ol style="list-style-type: none"> <li>1) MLIT can manage the detail safety of construction site due to legal condition and compliance.</li> <li>2) There are many new technologies of reducing human error, safety manners signboard in construction site.</li> <li>3) There are many guidelines of each work and operation for construction machine. Especially, check list of construction machine is very useful.</li> <li>4) MLIT makes monthly accidents report of construction works in their control area. And they make the main issues of safety point by accidents investigation. These are very helpful for current Viet Nam's construction site and refer to understand for Output-2 of CCQS-P, SPSM (Standard Plan for Safety Management).</li> </ol>		


**Group-3 : Cost estimation**

13. Strategy and Mechanism of Construction Economic Research, Construction Economics Institute, MOC	Head of Cost Research and Construction Market Division	Mr. Pham Huy Cuong
<ol style="list-style-type: none"> <li>1) As the guideline of indirect cost was finished last year, main activities of CCQS-P are direct cost, especially, labor, material and machinery cost.</li> <li>2) The standard of cost estimation system had been established in Japan and also ensured fairness and transparency in procedures of cost estimation.</li> <li>3) The cost estimation system has been revised due to the condition of construction industry, for example, new technology.</li> <li>4) The staffs of MLIT themselves are acutely conscious of cost estimation with high engineering skill. These points are helpful for considering the additional activities of Output-3, to make the guideline for direct cost.</li> </ol>		

**Group-4 : Evaluation construction work**

1. Construction Activity Management Authority, MOC	Deputy Director General	Mr. Nguyen Anh Tuan
<ol style="list-style-type: none"> <li>1) Evaluation method of engineering capacity of contractor is very effective measures to ensure fairness and transparency in supporting selection of contractors as well as consultants.</li> <li>2) CORINS/TECRIS which is a unique information service that provides data on achievement of public construction works all over Japan will probably be a good reference for Viet Nam.</li> <li>3) But, it needs a lot of budget and engineers to establish the similar system.</li> <li>4) Not only contractor must put effort into training personnel but also project owner is required to have high engineering skill.</li> </ol>		

**Group-5 : Contract management**

7. Construction Economics Department, MOC	Associate Deputy Director General	Mr. Ha Duc Thang
<ol style="list-style-type: none"> <li>1) Contract management is required fairness and transparency in procedures. Standing view of this point, comprehensive evaluation is very effective measures.</li> <li>2) Tendering Procurement Information Service and Electronic Bidding System developed by JACIC is also helpful for contract management.</li> <li>3) Support from government must be indispensable to establish these unified system.</li> <li>4) The collection of an enormous number of contract data is the big issues, especially budgetary constraints.</li> </ol>		

Source: Project team

(7) Documentary Photographs



Courtesy Visit / 07 Nov. 2016  
Assistant Vice-Minister for Engineering Affairs,  
Minister's Secretariat, MLIT  
Mr. H.GODOU



Courtesy Visit / 08 Nov. 2016  
Director-General,  
Kanto Regional Development Bureau, MLIT  
Mr. W.OONISHI



Lecture (L1) / 07 Nov. 2016  
Engineering Affairs Division, MLIT  
Director for Project Appraisal and Preventive  
Maintenance, Mr. Y. MASAYA  
&  
Lecture (L2) / 07 Nov. 2016  
Construction System Division, National Institute  
for Land and Infrastructure Management, MLIT  
Director, Mr. K. FURUMOTO



Lecture (L3.1-3.3) / 17 Nov. 2016  
JSCE (Japan Society of Civil Engineers)  
Utsunomiya University, D.Eng. Professor  
Mr. S. YAMAOKA (L3.1)  
&  
Tokyo Institute of Technology  
D.Eng. Research Professor,  
Mr. J. YOKOKURA (L3.2)  
&  
Kochi University of Technology  
D.Eng. Associate Professor  
Mr. T. GOSO (L3.3)



Lecture (L4~8.2) / 08~10 Nov. 2016  
Kanto Regional Development Bureau, MLIT,  
Engineering Management Division  
Deputy Director  
Mr. T. ISHIKAWA (L6) & Mr. ASABA (L7)  
&  
Engineering Affairs Division  
Deputy Director of Construction  
Mr. S.TAKAHASHI (L4&5)&  
Mr. T. KOSAWA (L8.2)  
&  
Contract Division, Subsection Chief,  
Mr. K. HIRIE (L8.1)

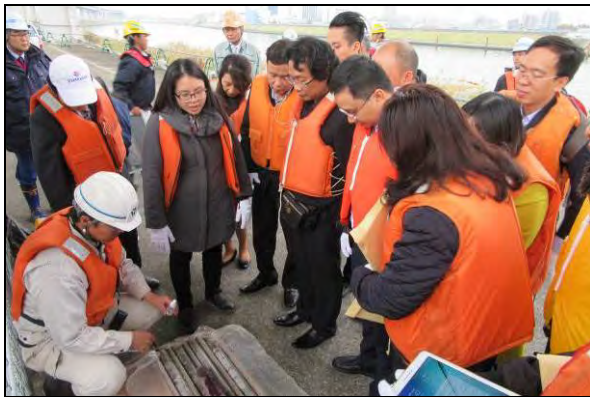




Lecture (L9.1-9.2) / 17 Nov. 2016  
JACIC (Japan Construction Information Center)  
Management and Planning Department,  
Deputy Director General, Mr. M.KOIDE (L9.1)  
&  
CORINS/TECRIS Center,  
Director, Mr. N. SUGIHARA (L9.2)



Lecture (L10) / 18 Nov. 2016  
Peace Building and Urban and Regional  
Development Division 1, JICA-HQs  
Deputy Director,  
Mr. R. KAWABE



Site visit (S1) / 08 Nov. 2016  
Bank reconstruction (Edogawa Ward, Tokyo)  
Arakawa-Karyu River Office  
Kanto Regional Development Bureau, MLIT



Site visit (S2) / 15 Nov. 2016  
Yamba Dam (Construction Site)  
(Naganohara Town, Gunma Pref.)  
Yamba Dam Work Office  
Kanto Regional Development Bureau, MLIT



Site visit (S3) / 10 Nov. 2016  
Tokyo-Port Tunnel (Construction Site)  
(Shinagawa Ward, Tokyo)  
Kawasaki Road Office  
Kanto Regional Development Bureau, MLIT



Site visit (S4) / 14 Nov. 2016  
Trans-Chubu Expressway (Construction Site)  
(Saku City, Nagano Pref.)  
Nagano Road Office  
Kanto Regional Development Bureau, MLIT





Site visit (S5) / 16 Nov. 2016  
Asaka Public Employment Security Office  
Building (Construction Site)  
(Asaka City, Saitama Pref.)  
Government Building Planning Division  
Kanto Regional Development Bureau, MLIT  
&  
Tokyo Government Building Office-1  
Kanto Regional Development Bureau, MLIT



Site visit (S6) / 16 Nov. 2016  
Shin-Isogo Sewer Pipe (Construction Site)  
(Yokohama City, Kanagawa Pref.)  
Yokohama City



Site visit (S7) / 09 Nov. 2016  
The Metropolitan Area Outer Underground  
Discharge Channel  
(Kasukabe City, Saitama Pref.)  
Edogawa River Office  
Kanto Regional Development Bureau, MLIT



Site visit (S8) / 15 Nov. 2015  
Neutralization Facility for strong acid river water  
(Kusatsu Town, Gunma Pref.)  
Sinaki Dam Water Control Office  
Kanto Regional Development Bureau, MLIT



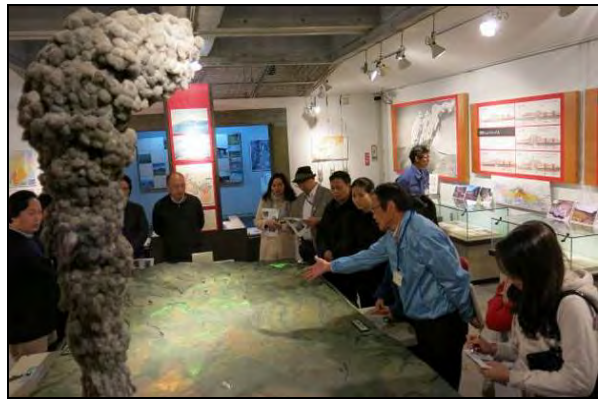
Site visit (S9) / 11 Nov. 2016  
Rainbow Bridge  
(Minato Ward, Tokyo)  
Metropolitan Expressway Company Ltd.



Site visit (S10) / 11 Nov. 2016  
Tokyo Rinkai Disaster Prevention Park  
(Koto Ward, Tokyo)  
Showa Memorial Park Office  
Kanto Regional Development Bureau, MLIT  
&  
Cabinet Office, Government of Japan



Site visit (S11.1) / 14 Nov. 2016  
Sabo Dam (Construction Site)  
(Tsumagoi Village, Gunma Pref.)  
Tone River Basin Sabo Office  
Kanto Regional Development Bureau, MLIT



Site visit (S11.2) / 14 Nov. 2016  
Tsumagoi Village Museum of History  
(Tsumagoi Village, Gunma Pref.)  
Tsumagoi Village



Site visit (S12) / 08 Nov. 2016  
Super Eco Building  
(Chuo Ward, Tokyo)  
SHIMIZU Co., Ltd.

Source: Project team

### **13.4 Third Training in Japan**

(1) Duration

The duration of the 3<sup>rd</sup> training in Japan was from 21 February to 03 March 2018 (11 days).

(2) Contents

The purpose of training program is to enhance the capacity of cost estimation, contract management and quality and safety management by lecture and inspection in Japan. The contents of the 3<sup>rd</sup> training were as follows,

1. Quality Management
2. Safety Management
3. Cost Estimation
4. Contract Management Work
5. Supervision and Inspection
6. Evaluation of Construction Work
7. Maintenance of Infrastructure
8. Disaster prevention, emergency disaster control measures

(3) Participants

The participants were the staff of counterparts, relevant departments and organizations.

ICD, in charge of CCQS Project coordination selected 15 representatives from the organizations allocated as follows,

1. International Cooperation Department (ICD), MOC: 2 seats
2. State Authority for Construction Economics (SACE), MOC: 3 seats
3. State Authority of Construction Quality Inspection (SACQI), MOC: 3 seats
4. Construction Activities Management Authority (CAMA), MOC: 3 seats
5. Institute of Construction Economics, MOC: 2 seats
6. Academy of Managers for Construction and Cities (AMC), MOC: 2 seats

Note: State Authority for Construction Economics (SACE, upgraded from Construction Economic Department (CED) in July 2017)

Table 13-14 shows the list of participants.

**Table 13-14 List of Participants of Third Training in Japan**

No.	Affiliated post	Occupation	Name
1. Leader	International Cooperation Department, MOC	Director General	Mr. Pham Khanh Toan
2. Sub Leader	State Authority for Construction Economics, MOC	Director General	Mr. Pham Van Khanh
3.	Construction Activity Management Authority, MOC	Chief of Office	Mr. Doan Manh Hung
4.	State Authority of Construction Quality Inspection, MOC	Vice Head	Ms. Le Thuy Hang
5.	International Cooperation Department, MOC	Official	Ms. Cao Thi To Uyen
6.	State Authority for Construction Economics, MOC	Expert	Ms. Phung Thi Huong Giang
7.	State Authority for Construction Economics, MOC	Expert	Ms. Nguyen Thuy Le
8.	Construction Activity Management Authority, MOC	Official	Mr. Vu Thanh Nam
9.	Construction Activity Management Authority, MOC	Official	Ms. Lai Thi Tuyen
10.	State Authority of Construction Quality Inspection, MOC	Official	Ms. Mai Thi Hong Nhi
11.	State Authority of Construction Quality Inspection, MOC	Official	Mr. Nguyen Huy Cuong
12.	Construction Economics Institute, MOC	Head of Division	Mr. Nguyen Thanh Binh
13.	Construction Economics Institute, MOC	Deputy Head	Ms. Vu Hong Hoa
14.	Academy of Managers for Construction and Cities, MOC	Head of Department	Mr. Vu Hoang Ngoc
15.	Academy of Managers for Construction and Cities, MOC	Deputy Head	Ms. Nguyen Thi Thu Nhan

Source: Project team



(4) Lectures and Site Visit

1) Lectures

The lectures compose the contents of cost estimation, contract management, quality and safety management, also including supervision and Inspection.

All lecturers used Japanese language, and an interpreter was present at all lectures. Vietnamese texts were prepared by JICA Tokyo in advance.

Table 13-15 shows the list of lectures.

**Table 13-15 List of Lectures of Third Training in Japan**

	Lecture Content	Lecturer			Date
		Affiliated post	Occupation	Name	
L1	Construction Management(1)	Engineering Affairs Division MLIT	Subsection Chief	Mr. Junji UCHIMURA	22 Feb. PM
L2	Construction Management(2)	National Institute for Land and Infrastructure Management, MLIT	Director	Mr. Kentaro SEKI	
L3.1	Construction Management(3)	Tokyo City University (Japan Society of Civil Engineers)	D.Eng. Associate Professor	Mr. Takashi GOSO	01 Mar. AM
L3.2		Utsunomiya University (Japan Society of Civil Engineers)	D.Eng. Professor	Mr. Satoshi YAMAOKA	
L3.3		Yachiyo-Engineering Co. Ltd. (Japan Society of Civil Engineers)<Former; Professor of Tokyo Institute of Technology>	D.Eng. Chief Engineer	Mr. Junji YOKOKURA	
L4	Quality Management	Kanto Regional Development Bureau, MLIT Engineering Affairs Division	Deputy Director	Mr. Kazuo IGUCHI	23 Feb. AM
L5	Safety Management	Kanto Regional Development Bureau, MLIT Engineering Affairs Division	Deputy Director	Mr. Kazuo IGUCHI	
L6	Cost estimation	Kanto Regional Development Bureau, MLIT Engineering Management Division	Deputy Director	Mr. Takehiko ISHIKAWA	26 Feb. AM
L7	Supervision and Inspection	Kanto Regional Development Bureau, MLIT Engineering Management Division	Deputy Director	Mr. Shinichi ASABA	26 Feb. AM
L8.1	Contract Management	Kanto Regional Development Bureau, MLIT Contract Division	Subsection Chief	Mr. Tatuya YANO	26 Feb. PM
L8.2		Kanto Regional Development Bureau, MLIT Engineering Affairs Division	Deputy Director	Mr. Youji KITAMI	
L9.1	Contract System	JACIC(Japan Construction Information Center)	Director General	Mr. Akira KINISHITA	28 Feb. PM
L9.2			Director	Mr. Naoki SUGIHARA	

Source: Project team

2) Site Visit

Site visit composes many kinds of construction, such as river work, dam, road, sewerage, office building and also including the site from the point of maintenance of infrastructure, disaster prevention.

All guides used Japanese language, and an interpreter was present at all site visits. Vietnamese texts were prepared by JICA Tokyo in advance.

Table 13-16 shows the list of site visit.

**Table 13-16 List of Site Visit of Third Training in Japan**

	Site	Attendant		Remarks
		Organization	Place	
S1	River works (Construction Management at river construction site)	Arakawa-Jouryu River Office, Kanto Regional Development Bureau, MLIT	Ageo City Saitama Pref.	23 Feb. PM
S2	Tokyo Ring Road (Construction Management at dam construction site)	Tokyo Ring Road Office, Kanto Regional Development Bureau, MLIT	Setagaya Ward Tokyo	27 Feb. PM
S3	Complex Building (Construction Management at building construction site)	Government building Planning Division, Kanto Regional Development Bureau, MLIT	Shinagawa Ward Tokyo	28 Feb. PM
S4	Sewerage construction Work (Construction Management at sewerage construction site)	Yokohama City	Yokohama City Kanagawa Pref.	01 Mar. PM
S5	Maintenance of Metropolitan Expressway	Metropolitan Expressway Company Ltd.	Minato Ward Tokyo	27 Feb. AM
S6	Tokyo Rinkai Disaster Prevention Park (Disaster prevention)	Showa Memorial Park Office, Kanto Regional Development Bureau, MLIT	Koto Ward Tokyo	27 Feb. AM
		Disaster Management, Cabinet Office, Government of Japan		



Source: Project team

3) Schedule

Table 13-17 shows the schedule of training and Figure 13-3 shows the location map of the third training in Japan.

**Table 13-17 Schedule of Third Training in Japan**

No	Date		Schedule	Location	Stay
1	21 Feb. (Wed)	AM	Hanoi (00:25) ⇒✈️ [JL752] ⇒Tokyo<Narita> (07:10) Narita-Airport ⇒🚗⇒JICA-Tokyo	—	JICA-Tokyo
		PM	Preparation for Training	JICA-Tokyo	
2	22 Feb. (Thu)	AM	Briefing / Orientation 【Courtesy visit】JICA-HQs	JICA-HQs	JICA-Tokyo
		PM	【L1】Construction Management(1) 【L2】Construction Management(2) 【Courtesy visit】MLIT	MLIT	
3	23 Feb. (Fri)	AM	【Courtesy visit】KRDB <sup>(*1)</sup> 【L4】Quality Management 【L5】Safety Management	Kanto Regional Development Bureau, MLIT	JICA-Tokyo
		PM	【S1】River works of Ara-River (Construction Management at river construction site)	Ageo City Saitama Pref.	
4	24 Feb. (Sat)	AM	【J1】Asakusa (Sensoji temple) and Sumida river (Boat Tour)	Taito Ward Tokyo	JICA-Tokyo
		PM	[Day-off ]		
5	25 Feb. (Sun)	AM	[Day-off ]	-	JICA-Tokyo
		PM	[Day-off ]	-	
6	26 Feb. (Mon)	AM	【L6】Cost estimation 【L7】Supervision and Inspection	Kanto Regional Development Bureau, MLIT	JICA-Tokyo
		PM	【L8.1】Contract Management 【L8.2】Contract Management		
7	27 Feb. (Tue)	AM	【S5】Maintenance of Metropolitan Expressway (Maintenance of Infrastructure)	Shinagawa Ward Tokyo	JICA-Tokyo
			【S6】Tokyo Rinkai Disaster Prevention Park (Disaster prevention)	Koto Ward Tokyo	
		PM	【S2】Tokyo Ring Road (Construction Management at road construction site)	Setagaya Ward Tokyo	
8	28 Feb. (Wed)	AM	【S3】Building Construction Work (Construction Management at building construction site) 【J2】Tokyo tower	Minato Ward Tokyo	JICA-Tokyo
		PM	JACIC <sup>(*2)</sup> 【L9.1】Contract System 【L9.2】Contract System	JACIC	
9	01 Mar. (Thu)	AM	JSCE <sup>(*3)</sup> 【L3.1】Construction Management(3) 【L3.2】Construction Management(3) 【L3.3】Construction Management(3)	JICA-Tokyo	JICA-Tokyo
		PM	【S4】Sewerage Construction Work (Construction Management at sewerage construction site)	Yokohama City Kanagawa Pref.	

No	Date	Schedule		Location	Stay
10	02 Mar. (Fri)	AM	Discussion	JICA-Tokyo	JICA-Tokyo
		PM	Evaluation and Review of Training		
11	03 Mar. (Sat)	AM	Preparation for return	JICA-Tokyo	
		PM	JICA-Tokyo⇒  ⇒Narita-Airport Tokyo<Narita> (18:30) ⇒  [JL751]⇒Hanoi(22:55)	-	-
Remarks	(*1) KRDB : Kanto Regional Development Bureau, MLIT (*2) JACIC : Japan Construction Information Center (*3) JSCE : Japan Society of Civil Engineers				

Source: Project team



Source: Project team

Figure 13-3 Location Map of Third Training in Japan



(5) Making the Report and Presentation by Participants

The Chief adviser requested participants (trainees) to make three kinds of reports, group discussion (preparation for presentation) and presentation as follows,

- ① The report of lectures (Form No.1)
- ② The report of site visit (Form No.1)
- ③ Completion report (Form No.2)
- ④ Group discussion (preparation for presentation) and presentation
  - ⇒Group-1 (Quality management)
  - ⇒Group-2 (Safety management)
  - ⇒Group-3 (Cost estimation)
  - ⇒Group-4 (Evaluation of Engineering Capacity)
  - ⇒Group-5 (Contract management)

Table 13-18 shows the sharing of report and presentation.

**Table 13-18 Sharing of Report and Presentation of Third Training in Japan**

Trainees		① Report of Lecture	② Report of Site Visit	③ Completion Report	④ Group Discussion	
1.	Mr. Pham Khanh Toan	ICD	L1	S1	○	G2
2.	Mr. Pham Van Khanh	SACE	L2	S2	○	G4
3.	Mr. Doan Manh Hung	CAMA	L3.1	S3	○	G3
4.	Ms. Le Thuy Hang	SACQI	L3.2	S4	○	G1
5.	Ms. Cao Thi To Uyen	ICD	L3.3	S5	○	G5
6.	Ms. Phung Thi Huong Giang	SACE	L4	S6	○	G3
7.	Ms. Nguyen Thuy Le	SACE	L5	S1	○	G2
8.	Mr. Vu Thanh Nam	CAMA	L6	S2	○	G5
9.	Ms. Lai Thi Tuyen	CAMA	L7	S3	○	G4
10.	Ms. Mai Thi Hong Nhi	SACQI	L8.1	S4	○	G3
11.	Mr. Nguyen Huy Cuong	SACQI	L8.2	S5	○	G5
12.	Mr. Nguyen Thanh Binh	ICE	L9.1	S6	○	G1
13.	Ms. Vu Hong Hoa	ICE	L9.2	S1	○	G2
14.	Mr. Vu Hoang Ngoc	AMC	L9.1	S2	○	G4
15.	Ms. Nguyen Thi Thu Nhan	AMC	L9.2	S3	○	G1

Source: Project team

(6) Presentation by Participants

After group discussion in the morning of the last training day, presentation was done in the afternoon at JICA Tokyo.

Table 13-19 shows the summary of presentation.

**Table 13-19 Summary of Presentation of Third Training in Japan**

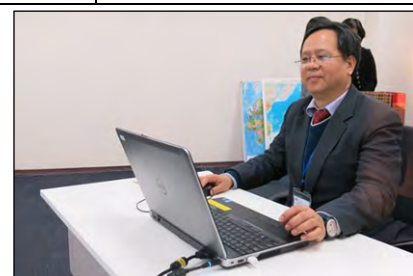
**Group-1 : Quality management**

12.	Construction Economics Institute, MOC	Head of Division	Mr. Nguyen Thanh Binh
1)	In construction works in Japan, the quality of material & equipment and construction itself is focused on, and its management method has been established. It is also shown in detail in the contract documents and is carried out thoroughly from the preparation stage before construction starts till completion.		
2)	As mentioned in 1) above, management method on quality has been established. In particular, supervision and inspection during construction, construction performance evaluation system, awards system, selection of contractors with comprehensive evaluation are functioning well. These are extremely effective means to the present Vietnamese construction industry.		
3)	In Japan, collaboration and mutual trust between the project owner and the contractor have been generated. Three-party (the project owner, the designer & the contractor) conference, one-day response, simplification of documents, etc. being implemented in Japan seem to be the methods incorporated immediately in Viet Nam		
4)	New technologies to minimize human error have also been introduced in Japan, which are extremely effective means for the construction industry in Viet Nam. However, development costs for such may be difficult to prepare in Viet Nam.		
5)	Transparency and competitiveness are also necessary for consistent quality control from contract preparation stage to completion.		



**Group-2 : Safety management**

1.	International Cooperation Department, MOC	Director General	Mr. Pham Khanh Toan
1)	In Japan, the roles and responsibilities of the project owners and contractors are clarified not only from safety management but also from construction works as a whole to detailed matters.		
2)	Regarding the expenses required for safety management, the project owners estimate it and the contractors can appropriately perform safety management according to various guidelines.		
3)	The safety management is assessed in the performance score and the evaluation index at the time of bidding and reflected in the selection of the contractor.		
4)	Regarding construction accidents, transparency is essential, such as grasping the number of incidents occurred, periodically analyzing factors, and making public announcements. Also, penalties should be tightened.		
5)	Based on the above points, it is required that the project owners and contractors work together in Viet Nam to foster safety culture and mind in construction works.		



**Group-3 : Cost estimation**

6.	State Authority for Construction Economics, MOC	Expert	Ms. Phung Thi Huong Giang
<ol style="list-style-type: none"> <li>1) Cost estimation of construction works in Viet Nam has many problems in each matter such as norm, unit price, machinery cost, equipment related expenses, survey, design, cost related to acquisition of land, etc.</li> <li>2) Especially, regarding labor costs, it is necessary to set detailed ones similar to Japan, because labor costs are just average value of 7 ranks in Viet Nam.</li> <li>3) In addition, machinery costs shall be established based on purchase price of new construction machinery, and it is necessary to set costs (depreciation, maintenance &amp; repair, operation and others) in hours, days, weeks, and months respectively.</li> <li>4) It is necessary to set the norm, unit price, machinery cost, etc. required for accumulation based on the actual survey as implemented in Japan.</li> <li>5) In establishing the accumulation system in Vietnam, it is essential to ensure transparency and flexibility based on the above points.</li> </ol>			



**Group-4 : Evaluation construction work**

14.	Academy of Managers for Construction and Cities, MOC	Head of Department	Mr. Vu Hoang Ngoc
<ol style="list-style-type: none"> <li>1) In Japan, construction companies are evaluated with securing fairness and transparency.</li> <li>2) For construction work, the project owners score on the performance of management during construction and the finished product at completion.</li> <li>3) Also the project owners evaluate engineers who have been in charge of construction work, and this is reflected in the selection of contractors, along with the construction results.</li> <li>4) Those mechanisms may be referred to for Viet Nam, but first of all it is necessary to prepare appropriate rules and regulations.</li> <li>5) Furthermore, it is also necessary to disseminate the above to the project owners and contractors, and also to strengthen supervision and inspection systems under construction in their respective positions.</li> </ol>			



**Group-5 : Contract management**

8.	Construction Activity Management Authority, MOC	Official	Mr. Vu Thanh Nam
<ol style="list-style-type: none"> <li>1) For contract management, it is essential to ensure fairness and transparency in the procedure and clarify the responsibilities and obligations among the project owners and contractors.</li> <li>2) In Viet Nam it is necessary to develop standard contract conditions, similar to Japan consisting of 55 articles.</li> <li>3) At the same time, it is necessary to develop guidelines for contract management based on the contract conditions.</li> <li>4) In addition, capacity enhancement for proper contract management is required in technical viewpoint.</li> <li>5) Ultimately, revisions of law and regulations are required, and in same time it is essential to promote understanding not only by the staff of the Ministry of Construction but also by the staff in related organizations such as other ministries and agencies through training etc.</li> </ol>			



Source: Project team

(7) Documentary Photographs



Courtesy Visit / 22 Feb. 2018  
Director General,  
Infrastructure and Peacebuilding Department,  
JICA-HQs  
Mr. I. ADACHI



Courtesy Visit / 23 Feb. 2018  
Assistant Vice-Minister for Engineering Affairs,  
Minister's Secretariat, MLIT  
Mr. H. GODOU



Courtesy Visit / 23 Feb. 2018  
Director-General,  
Kanto Regional Development Bureau, MLIT  
Mr. H. TOMARI



Lecture (L1) / 22 Feb. 2018  
Engineering Affairs Division, MLIT  
Subsection Chief, Mr. J. UCHIMURA



Lecture (L2) / 22 Feb. 2018  
Construction System Division, National Institute  
for Land and Infrastructure Management, MLIT  
Director, Mr. K. SEKI





Lecture (L3.1-3.3) / 01 March 2018  
JSCE (Japan Society of Civil Engineers)  
Kochi University of Technology  
D.Eng. Associate Professor  
Mr. T. GOSO (L3.1)  
&  
Utsunomiya University  
D.Eng. Professor  
Mr. S. YAMAOKA (L3.2)  
&  
Yachiyo-Engineering Co. Ltd  
D.Eng. Chief Engineer,  
Mr. J. YOKOKURA (L3.3)



Lecture (L4~8.2) / 23&26 Feb. 2018  
Kanto Regional Development Bureau, MLIT,  
Engineering Management Division  
Deputy Director  
Mr. T. ISHIKAWA (L6) & Mr. ASABA (L7)  
&  
Engineering Affairs Division  
Deputy Director  
Mr. S.IGUCHI (L4&5)&  
Mr. T. KITAMI (L8.2)  
&  
Contract Division, Subsection Chief,  
Mr. T.YANO (L8.1)



Lecture (L9.1-9.2) / 28 Feb. 2018  
JACIC (Japan Construction Information Center)  
Management and Planning Department,  
Director General, Mr. A. KINISHITA (L9.1)  
&  
CORINS/TECRIS Center,  
Director, Mr. N. SUGIHARA (L9.2)



Lecture (L10) / 02 March 2018  
Peace Building and Urban and Regional  
Development Division 1, JICA-HQs  
Director, Mr. N. MUROOKA  
&  
Ms. Y. HIRABAYASHI  
&  
Southeast Asia Division 3, Southeast Asia and  
Pacific Department  
Mr. S. IDO



Site visit (S1) / 23 Feb. 2018  
Sluiceway reconstruction  
(Ageo City, Saitama Pref.)  
Arakawa-Jouryu River Office  
Kanto Regional Development Bureau, MLIT



Site visit (S2) / 27 Feb. 2018  
Tokyo Ring Road (Construction Site)  
(Setagaya Ward, Tokyo)  
Tokyo Ring Road Office  
Kanto Regional Development Bureau, MLIT



Site visit (S3) / 28 Feb. 2018  
Complex Building (Construction Site)  
(Minato Ward, Tokyo)  
Government Building Planning Division  
Kanto Regional Development Bureau, MLIT



Site visit (S4) / 01 March 2018  
Storm sewer (Construction Site)  
(Yokohama City, Kanagawa Pref.)  
Yokohama City



Site visit (S5) / 27 Feb. 2018  
Maintenance of Metropolitan Highway  
(Shinagawa Ward, Tokyo)  
Metropolitan Expressway Company Ltd.



Site visit (S6) / 27 Feb. 2018  
Tokyo Rinkai Disaster Prevention Park  
(Koto Ward, Tokyo)  
Showa Memorial Park Office  
Kanto Regional Development Bureau, MLIT  
&  
Cabinet Office, Government of Japan

Source: Project team



## Chapter 14 Result of Joint Review

### 14.1 Objectives of the Joint Review

The Joint Review was performed with the following objectives;

- (1) To verify the accomplishments of the Project as compared to those planned;
- (2) To analyze the Project in terms of DAC Evaluation Criteria (i.e. Relevance, Effectiveness, Efficiency, Impact and Sustainability);
- (3) To identify obstacles and/or facilitating factors that have affected the implementation process;
- (4) To extract lessons learned so that similar projects could utilize the experience of the Project;
- (5) To confirm the plan of counterparts for the achievement of the overall goal after completion of the Project.

**Table 14-1 DAC Evaluation Criteria and Viewpoint**

Criteria	Viewpoint
Relevance	To see the validity of the Project Purpose and Overall Goal with aspect of the development policy of both the donor and recipient Governments and the needs of beneficiaries of the Project
Effectiveness	To see if Project Purpose is achieved as expected as a result of the Project's Outputs
Efficiency	To see if the timing, quality and quantity of inputs are appropriate for the degree of achievement on the Outputs, using the resources effectively
Impact	To see the direct and indirect effects in the long run generated through the Project from both positive and negative aspects, even with the ones not expected when it was planned
Sustainability	To examine the current extent to what the achievement of the Project is sustained or expanded after the project is completed, focusing on institutional, financial and technical aspects

Note: DAC is an abbreviation for OECD Development Assistance Committee

Source: Project team

### 14.2 Method of Joint Review

The review of the Project was conducted by document review (Monitoring Sheet, Minutes of Meeting, Feedback Sheet of Training Seminar etc.), questionnaires and interviews to counterparts and JICA experts.

Among five criteria, Relevance, Effectiveness and Efficiency were evaluated based on the current situation and achievement at the time of the Project completion. Impact and Sustainability were reviewed based on the current situation, forecast and expectation in the future.

### 14.3 Achievements of the Project

#### 14.3.1 Outputs and Indicators

The achievement of outputs, over the entire Project period is summarized as follows;

Output 1: (State Authority of Construction Quality Inspection: SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.

➤ Indicator: 1-1 Standard Plan for QM (SPQM) is prepared by December 2015.

- ◆ Draft SPQM was prepared by December 2015 and presented at CPMU meeting in December 2015.
- ◆ Based on the discussion at Component Project Management Unit (CPMU) meeting, SPQM was revised and presented in the meeting between MOC Project Preparation Members and JICA team and submitted in the Second Joint Steering Committee (JSC) meeting in April 2016.

- ◆ The dialogue with the construction industries in Viet Nam was arranged in April 2016 and comments for SPQM were collected from them. After reviewing all comments, SPQM was revised again and submitted to MOC in June 2016 with the covering letter.
  - ◆ At the end of 2016, counterparts (C/Ps) sent SPQM to outside experts for their comments and their comments were submitted to C/Ps in April 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed and agreed in CPMU meetings.
  - ◆ The Project team revised SPQM as final version in accordance with the action plans and submitted it again to MOC with the covering letter in August 2017.
- Indicator: 1-2 Cost of QM for case-studied projects is estimated by February 2016.
- ◆ Cost of QM was estimated by April 2016 and provided to Output 3 for the Guideline on the Cost Estimation for Indirect Construction Contractor Works, after discussion and confirmation in CPMU meeting of Output 1.
  - ◆ Some discussions were carried out with C/Ps of Output 3 and differences in cost for QM were found at the end of 2016. The Project team reviewed it further and revised, then eventually got an agreement on the revised figures in CPMU meeting in July 2017.
- Indicator: 1-3 Guideline for Quality Supervision and Inspection (GLQI) for State Authorities (SAs) & Project Owners (POs)/ Project Management Units (PMUs) is prepared by September 2017.
- ◆ As additional activities, preparation of the Guideline for Quality Supervision and Inspection (GLQI) was incorporated into the Project in October 2016. Draft GLQI was compiled by June 2017.
  - ◆ C/Ps sent the draft GLQI to outside experts for their comments and their comments were submitted to C/Ps in August 2017. At the same time, the Project team presented the draft GLQI in Project Coordination Unit (PCU) meeting in September 2017. The Project team reviewed the comments (including further comments of C/Ps) and prepared action plans on the comments.
  - ◆ The Project team revised GLQI as final version in accordance with the action plans and presented it in CPMU and the Fifth JSC meeting in October 2017, then submitted it to MOC with the covering letter in October 2017.

Output 2: (SACQI) Capacity for identifying necessary items concerning the safety management (SM) and environment management (EM) of construction works is enhanced.
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- Indicator: 2-1 Standard Plan for SM (SPSM) is prepared by December 2015.
- ◆ Draft SPSM was prepared by December 2015 and then, discussed / revised and agreed in CPMU meetings.
  - ◆ SPSM was presented in the meeting between MOC Project Preparation Members and JICA team and submitted in the Second JSC meeting in April 2016.
  - ◆ The dialogue with the construction industries in Viet Nam was arranged in April 2016 and comments for SPSM were collected from them. After reviewing all comments, SPSM was compiled and submitted to MOC in June 2016 with the covering letter.
  - ◆ At the end of 2016, C/Ps sent SPSM to outside experts for their comments and their comments were submitted to C/Ps in March 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed in CPMU meetings.
  - ◆ The Project team revised SPSM as final version in accordance with the action plans in May 2017.
  - ◆ As additional activities, preparation of the Standard Plan for Environment Management (SPEM) was incorporated into the Project in October 2016. It was agreed that SPSM and



SPSEM would be combined to the Standard Plan for Safety and Environment Management (SPSEM). The draft SPSEM was compiled by June 2017.

- ♦ C/Ps sent the draft SPSEM to outside experts for their comments and their comments were submitted to C/Ps in August and September 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed and agreed in CPMU meetings.
  - ♦ The Project team revised SPSEM as final version in accordance with the action plans and agreed in CPMU meeting in September 2017. The Project team presented it in PCU meeting and the Fifth JSC meeting, and submitted it to MOC in October 2017 with the covering letter.
- Indicator: 2-2 Cost of SM for case-studied projects is estimated by February 2016.
- ♦ Cost of SM was estimated by May 2016 and provided to Output 3 for the Guideline on the Cost Estimation for Indirect Construction Contractor Works, after discussion and confirmation in CPMU meeting of Output 2.
- Indicator: 2-3 Guideline for Safety and Environmental Inspection (GLSEI) for SAs & POs/PMUs is prepared by September 2017.
- ♦ As additional activities, preparation of the Guideline for Safety and Environmental Inspection (GLSEI) was incorporated into the Project in October 2016. GLSEI was compiled by July 2017.
  - ♦ C/Ps sent the draft GLSEI to outside experts for their comments and their comments were submitted to C/Ps in August and September 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed and agreed in CPMU meetings.
  - ♦ The Project team revised GLSEI as final version in accordance with the action plans and agreed in CPMU meeting in September 2017. The Project team presented it in PCU meeting and the Fifth JSC meeting, and submitted it to MOC in October 2017 with the covering letter.
  - ♦ Further review and discussions were conducted and revised GLSEI was submitted again to MOC in December 2017 with the covering letter.

Output 3: (State Authority for Construction Economics: SACE<sup>1</sup>) Capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.

- Indicator: 3-1 “Guideline on the cost estimation for indirect construction contractor works (GLCE-1)” is submitted to MOC by March 2016 for approval.
- ♦ Draft GLCE-1 was formulated and agreed in CPMU meetings in April 2016.
  - ♦ GLCE-1 was presented in the meeting between MOC Project Preparation Members and JICA team and submitted in the Second JSC meeting in April 2016.
  - ♦ The dialogue with the construction industries in Viet Nam was arranged in April 2016 and comments for GLCE-1 were collected from them. After reviewing all comments, GLCE-1 was compiled and submitted to MOC in July 2016 with the covering letter.
- Indicator: 3-2 “Guideline on the cost estimation for direct construction contractor works (GLCE-2)” is submitted to MOC by September 2017 for approval.
- ♦ As additional activities, preparation of the Guideline on the Cost Estimation for Direct Construction Contractor Works (GLCE-2) was incorporated into the Project in October 2016.

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<sup>1</sup> State Authority for Construction Economics (SACE, upgraded from Construction Economic Department (CED) in July 2017)

It was agreed that GLCE- 1 and 2 would be combined to the Guideline on the Cost Estimation for Construction Contractor Works (GLCE). Draft GLCE was compiled by August 2017.

- ♦ The Project team reviewed and revised GLCE as final version in accordance with the comments provided by C/Ps, and agreed in CPMU meeting in September 2017. The Project team presented it in PCU meeting and the Fifth JSC meeting, and submitted it to MOC in October 2017 with the covering letter.
  - ♦ Further review and discussions were conducted and revised GLCE was submitted again to MOC in January 2018 with the covering letter.
- Indicator: 3-3 More than 70 % of participants of trainings/seminars on “Guideline on the cost estimation for construction contractor works (GLCE)” understand the contents.
- ♦ The training workshops were held at Hanoi, Da Nang and HCMC in November and December 2016 and at Hanoi, Da Nang, Can Tho and Ho Chi Minh City (HCMC) in November and December 2017. The average score of comprehension test of Output 3 was 74.7 in 2016 and 75.5 in 2017.
- Indicator: 3-4 Draft circular for authorizing GLCE is submitted to MOC by October 2017 for approval.
- ♦ Draft circular for GLCE was prepared and agreed in CPMU meeting in September 2017. The Project team submitted it to MOC in October 2017 with the covering letter.

Output 4: (Construction Activity Management Authority: CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.
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- Indicator: 4-1 “The evaluation method on engineering capacity of construction contractors” is submitted to MOC by September 2016 for approval.
- ♦ The evaluation method on engineering capacity of construction contractor was developed and agreed in CPMU meetings in September 2016.
  - ♦ The evaluation method was presented in the meeting between MOC Project Preparation Members and JICA team in September 2016, then presented and submitted in the Third JSC meeting in October 2016.
  - ♦ The Project team submitted the evaluation method to MOC in October 2016 with the covering letter.
  - ♦ The dialogue with the construction industries in Viet Nam was arranged in March 2017. Comments for the evaluation method on engineering capacity were collected from them, however it didn’t require the revision of the evaluation method.
- Indicator: 4-2 More than 70 % of participants of trainings/seminars on “the evaluation method on engineering capacity of const.-contractors” understand the contents.
- ♦ The training workshops were held at Hanoi, Da Nang and HCMC in November and December 2016 and at Hanoi, Can Tho and HCMC in June 2017. The average score of comprehension test of Output 4 was 72.4 in 2016 and 76.1 in 2017.
- Indicator: 4-3 Draft circular for authorizing the evaluation method on engineering capacity of construction contractors is submitted to MOC by October 2016 for approval.
- ♦ The draft circular for the evaluation method on engineering capacity of construction contractor was prepared and agreed in CPMU meeting in October 2016. The Project team presented it in the Third JSC meeting in October 2016 and submitted it to MOC together with the evaluation method on engineering capacity with the covering letter.

- Indicator: 4-4 Draft of “construction contractor grading system” is submitted to MOC by April 2017 for approval.
  - ◆ The construction contractor grading system was included in the evaluation method on engineering capacity and submitted to MOC with the covering letter in October 2016 through the same process stated in indicator 4-1 above.
  
- Indicator: 4-5 Improvement of regulation on qualification for PMUs is prepared by July 2016.
  - ◆ The document on improvement of regulation on qualification for PMUs was prepared and then, discussed, revised and agreed in CPMU meetings in June 2016.
  - ◆ The Project team presented the document in the meeting between MOC Project Preparation Members and JICA team in August 2016. After reviewing all comments received, the Project team compiled the improvement of regulation of PMU qualification and submitted it to MOC in August 2016 with the covering letter.

Output 5: (SACE & SACQI) Capacity for contract management of construction contractor works is enhanced.

- Indicator: 5-1 and 5-2 “Guideline on contract management” and “Guideline on contract alternation” are submitted to MOC by February 2017 for approval.
  - ◆ The draft Guideline on Contract Management and Contract Alteration (GLCM) was prepared and discussed in CPMU meetings in October 2016. GLCM was reviewed / revised and discussed for finalization in CPMU meeting in February 2017.
  - ◆ The dialogue with the construction industries in Viet Nam was arranged and comments for the draft GLCM were collected from them in March 2017.
  - ◆ The Project team also presented the draft GLCM in PCU meeting in March 2017. After reviewing all comments, the Project team compiled GLCM and submitted it to MOC in March 2017 with the covering letter. The Project team presented GLCM in the Fourth JSC meeting in April 2017.
  - ◆ Further review and discussions were conducted and revised GLCM was submitted again to MOC in December 2017 with the covering letter.
  
- Indicator: 5-3 More than 70 % of trainings/seminars participants of the above guideline understand the contents.
  - ◆ The training workshops were held at Hanoi, Da Nang, and HCMC in November and December 2016 and at Hanoi, Can Tho and HCMC in June 2017. The average score of comprehension test of Output 5 was 69.4 in 2016 and 78.0 in 2017.

### 14.3.2 Project Purpose and Indicators

Project purpose: Regulations for management of public construction projects are improved.

- Indicator 1: More than half of the stakeholders\* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.
  - \*the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic
  
- Indicator 2: More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.
  - ◆ The information regarding these indicators was obtained through feedback sheet collected at the Second Training Workshops in June 2017, and the Third Training Workshops in

November and December 2017. Participants of these workshops were the staff of MOC, Department of Construction (DOC), Department of Transport (DOT) and other ministries, PMUs, Consultants and Contractors.

- ♦ For the question “Do you think our guidelines/methods help for the management of public construction to approach the international level?”, 83% of participants agreed and 17% of those agreed somewhat at the Second training workshops.
- ♦ For the question “Do you think our standard plan / guidelines help for the management of public construction to approach the international level?”, 81% of participants agreed and 19% of those agreed somewhat at the Third training workshops.
- ♦ For the question “Do you think regulations for management of public construction projects are improved?”, 51% of participants agreed and 47% of those agreed somewhat at the Third training workshops.

#### **14.4 Results of the Joint Review based on DAC<sup>2</sup> Evaluation Criteria**

The Joint Review of the Project was conducted from the viewpoints of five criteria, namely, Relevance, Effectiveness, Efficiency, Impact and Sustainability of the Project. The grading was made basically at three levels, namely **Low**, **Moderate** and **High**.

##### **14.4.1 Relevance**

**Relevance** of the Project is considered **High** based on the following reasons;

###### **(1) Relevance with Vietnamese Government Policy**

The Project is considered well aligned with “Socio-Economic Development Plan in the 2016-2020 period” approved by the National Assembly on April 12, 2016 as well as “Socio-Economic Development Strategy for the period of 2011-2020” approved in the 11<sup>th</sup> National Congress of the Communist Party of Viet Nam in January 2011.

“Socio-Economic Development Strategy for the period of 2011-2020” aims to become a modern oriented industrial country by 2020 and construction of infrastructure system is considered as one of the strategic breakthroughs. “Socio-Economic Development Plan in the 2016-2020 period” also emphasizes the importance of infrastructure development. However, a rapid increase in infrastructure construction projects has also brought negative aspects of development, i.e. inadequate quality of construction works and industrial accidents during construction works. In addition, the cost estimation and contract management for construction projects in Viet Nam still has a large difference to compare with international standard. The Project aims at enhancing capacity of relevant management organizations in term of cost estimation and contract management with the ultimate objectives being the implementation of construction projects with safety, high quality and efficiency. These are considered to be prerequisite for the National Development Plan and the Strategy. Thus, the Project is highly consistent with the Vietnamese development policy.

###### **(2) Relevance with Japanese Government Policy**

In the Country-wise Assistance Strategy for Viet Nam issued in December 2012, the Government of Japan states that Japan will assist Viet Nam in enhancement of international competitiveness for sustainable development, overcoming vulnerability, and creation of fair society, aiming at achieving industrialization by 2020 as set forth in Viet Nam’s “Socio-Economic Development Strategy for the Period of 2011-2020” and Socio-Economic Development Plan for the Period of 2011-2015”.

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<sup>2</sup> The Organization for Economic Co-operation and Development's (OECD) Development Assistance Committee (DAC) is a forum to discuss issues surrounding aid, development and poverty reduction in developing countries

In the Country-wise Assistance Strategy, the Government of Japan regards infrastructure development as one of the prioritized areas to meet increasing demand as a result of rapid economic growth.

The Project is highly relevant with the Japanese Government Policy as it aims to establish institutionalization and human resource development in terms of infrastructure quality assurance, which is considered the basis for infrastructure development in Viet Nam.

(3) Consistency with Development Needs of Viet Nam and Target Group

Viet Nam has strong demand for infrastructure construction. However, quality of construction work and safety condition in construction site are not sufficient, and accidents at construction site and construction contract disputes occur frequently. It hinders the efficiency of construction works and the activities of domestic and foreign consultants and contractors which are implementing construction packages in Viet Nam. Such situation sometimes results in the low quality of infrastructures and delay of infrastructure development of Viet Nam. This project aims to improve quality, safety, cost estimation and contract management of construction package, therefore it's consistent with Vietnamese development needs.

MOC regulates the construction related legislation, planning, inspection etc., and improvement of construction related system toward international standard is urgent issue for MOC. MOC is strongly demanded to establish the system which ensure the effective and efficient use of investment budget with transparency in the above-mentioned circumstances. Thus, this Project Purpose is highly consistent with the needs of MOC. The specific needs of SACQI/SACE/CAMA are as follows;

- SACQI is responsible for the quality and safety management of construction work and improvement of safety and quality management of construction work is urgent matter for Viet Nam. Environmental protection on construction works is issue of growing interest in Viet Nam and it is necessary for MOC to establish the system to correspond to it.
- SACE is responsible for the management of construction contract and cost estimation system. Improvement of the current unilateral contract condition in Viet Nam toward international standard is urgent issue for SACE. Besides, current cost estimation system does not match the current situation amid progress in market economy and need to be reformed to approach the international standard. SACE recognizes these issues and necessity to revise not only indirect cost but also direct cost, so this project was consistent with the needs of SACE.
- CAMA: During the Project, CAMA developed the Decree 59 (2015/ND-CP dated June 18, 2015) and Circular 17 (2016/TT-BXD dated June 30, 2016), which deal with qualification of construction contractors and individuals. Evaluation method/ grading system of construction contractor in Output 4 explains the important ideas, methods and recommendations for those regulations and matches the needs of CAMA.

(4) Appropriateness of Project Design/Approach

Implementation structure of this Project is composed of JSC, PCU and CPMUs. This structure was very effective to clarify the responsibility for each output and activities, and maintain close coordination each other. It was also effective that this project approached the issues of construction work from several aspects simultaneously, since these issues are mutually interrelated.

This Project activities started from case studies and review of current regulations, then gaps/issues were identified. Based on the identified gaps and issues, output documents were prepared and then training workshops were conducted to disseminate the outputs of the Project. This approach and measures were very practical and appropriate to tackle the issues of Viet Nam and useful for C/Ps to realize the actual situation of construction works. JICA experts also understood Vietnamese situation well through this process and it enabled JICA experts to propose suitable methods for Viet Nam. Dialogue with the construction industries was also good opportunity to hear and incorporate the opinion of related third parties.

#### 14.4.2 Effectiveness

**Effectiveness** of the Project is considered **High** based on the following reasons;

(1) Degree of Achievement of Project Purpose Including Project Outputs

The Project Purpose “*Regulations for management of public construction projects are improved*” has been reasonably achieved at the time of December 2017 as described in 14.3.2.

- ♦ All outputs were produced as planned although there are some ahead and behind. The comments of outside experts and construction industries were incorporated into the outputs documents, then after necessary revision and finalization, those were submitted to MOC. Many new concepts were introduced to C/Ps through the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project). They learned and understood that including the background and methodology through active and in-depth discussion. C/Ps also realized the difference between Vietnamese system and international standard and motivated to improve their system.
- ♦ Some recommendations and ideas proposed in outputs documents were already incorporated into Decree/Circular such as Circular 4 for safety management. SACQI is considering the revision of Decree 46 regarding quality management, SACE is planning to revise Decree 32 and 37, and CAMA has plan to revise Decree 59 and 42 in 2018. Legislation of standard plan/guidelines are progressing to some extent, of course it takes a certain amount of time for legislation after submission of outputs documents to MOC. According to the feedback sheet of training seminar, more than half of participants think that regulations for management of public construction projects are improved.

(2) Changes of Outputs and Other Outputs

Additional activities and outputs documents were added for Outputs 1, 2, 3 on October 2016, at the middle of the project period. It contributed to fulfill the project purpose/outputs satisfactory by addressing the essential needs of MOC.

“Implementation guideline for work performance evaluation” has been prepared in output 4 toward the commencement of work performance evaluation other than the original scope. Although main scope of output 4 is on evaluation/grade of construction contractors, some recommendations in engineer’s qualifications have been also introduced upon the request of C/Ps.

#### 14.4.3 Efficiency

**Efficiency** of the Project is considered **Moderate** based on the following reasons;

Inputs such as project personnel and cost by both the Japanese and Vietnamese sides have been executed reasonably in general, and the Outputs have been achieved satisfactory at the time of completion of the Project. Efficiency was considered Moderate taking into consideration of the one (1) month extension of the Project due to the change of the schedule of training in Japan, and the demand from Viet Nam side to continue the support from JICA until the end of 2018, since fiscal year of Viet Nam is January to December.

#### 14.4.4 Impact

**Positive Impacts** are observed at current situation and expected after completion of the Project based on the following reasons;

(1) Achievement of Overall Goal

Overall Goal: Construction projects are managed according to the international standards.
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- Indicator 1: The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.
  - ♦ SPSM prepared in Output 2 was already incorporated into Circular 4 (2017/TT-BXD dated March 30, 2017). If safety management will be improved based on this Circular, the fatal labor accident frequency will be reduced.

The past data to show the status of accidents are as shown in the table below;

Item	2013	2014	2015	2016
Total labor accident	6,695	6,709	7,620	7,981
Number of fatal accident (a)	562	592	629	799
Ratio of fatal accident caused by construction works (b)	28.6%	33.1%	35.2%	23.8%
<b>Number of fatal accident caused by construction works (a)x(b)</b>	<b>161</b>	<b>196</b>	<b>221</b>	<b>190</b>
Number of victims	6,887	6,941	7,785	8,251
Number of seriously injured	1,506	1,544	1,704	1,952
Number of death (c)	627	630	666	862
Ratio of number of death caused by construction works (d)	26.5%	33.9%	37.9%	24.5%
<b>Number of death caused by construction works (c)x(d)</b>	<b>166</b>	<b>214</b>	<b>252</b>	<b>211</b>

Source: Ministry of Labor, Invalids and Social Affairs

The fatal labor accident frequency shall be calculated based on the man-hour worked, however such statistical data is not available at this time. It is required for MOC to periodically collect data related to the labor accidents to monitor the impact of the Project on the construction works.

As reference, fatal accident ratio and death ratio are calculated experimentally based on the construction investment at current price and at constant 2010 prices as table below. Applicability for indicator shall be studied further.

Item	2013	2014	2015	2016 (Prel.)
Investment at current prices (billion dong) (a)*	59,975	95,216	78,572	84,650
Investment at constant 2010 prices (billion dong) (b)*	47,875	75,748	60,263	65,495
Number of fatal accident caused by construction works (c)	161	196	221	190
<b>Fatal accident ratio based on investment at current prices (c)/(a)x1,000</b>	<b>2.68</b>	<b>2.06</b>	<b>2.81</b>	<b>2.24</b>
<b>Fatal accident ratio based investment at constant 2010 prices (c)/(b)x1,000</b>	<b>3.36</b>	<b>2.59</b>	<b>3.67</b>	<b>2.90</b>
Number of death caused by construction works (d)	166	214	252	211
<b>Death ratio based on investment at current prices (d)/(a)x1,000</b>	<b>2.77</b>	<b>2.25</b>	<b>3.21</b>	<b>2.49</b>
<b>Death ratio based investment at constant 2010 prices (d)/(b)x1,000</b>	<b>3.47</b>	<b>2.83</b>	<b>4.18</b>	<b>3.22</b>

\*Source: Statistical Yearbook of Vietnam 2016

- Indicator 2: Academy of Managers for Construction and Cities (AMC) and similar organizations\* conduct trainings on “Quality Management”, “Safety Management”, “Cost Estimation”, “Evaluation on Engineering Capacity of Construction Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year, three years after completion of the Project. (\*Similar organization; Training center for staff of contracting ministry/agency)
  - ♦ AMC prepared 10 training courses at 3 locations for CCQS Project outputs in 2018. Plan of training for 2019 and 2020 will be examined considering the result of training in 2018 and the progress of institutionalization of CCQS Project outputs. C/Ps presented as lecturers in training workshops during the Project period and their capability for conducting training program was enhanced. AMC implements a lot of training course every year, and they also participated in training seminar during project period to obtain the overview for conducting trainings based on the guidelines made by the Project after the completion of the Project. Therefore, it is highly expected that AMC conduct training course regularly with assistance of C/Ps after project completion.

- Indicator 3: More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.
  - ◆ It is required for AMC to conduct comprehension test at the completion of the training and compile the test results appropriately with the participants lists. Comprehension check or examination is carried out as normal practice in AMC with questionnaire for feedback.

(2) Other Impact Observed

Through the implementation of the Project, following positive impacts were observed.

- ◆ At the detailed planning survey in 2014, it was pointed out that the implementation method of JICA technical cooperation project was not well understood by MOC. Through this Project, various departments of MOC were involved in the all activities of the Project with the sense of ownership and understanding of JICA technical cooperation project method was deepened.
- ◆ There are no personnel changes between departments in MOC and it tends to be vertically segmented administrative system which is generally observed in governmental organization. However, it was essential to cooperate and share information among several departments for the activities of this Project, and as a result, communication between International Cooperation Department (ICD)/ SACQI/ SACE/ CAMA/ AMC and related departments became closer and smoother.
- ◆ Except SACQI, other departments of MOC do not have much opportunity to visit construction site and interact with stakeholders of construction industry. Through case studies, dialogue with construction industries and training seminars, MOC understood the importance of visiting the site and hearing the opinion of stakeholders and got deeper understanding of the actual situation of construction work.
- ◆ The bidding conditions of the construction package which is owned by MOC in 2016 included the examination of management items proposed by Output 4 in this Project. It was confirmed that MOC has started their efforts that can be implemented without revision of laws and regulations.
- ◆ Department of Urban Planning and Architecture of MOC and MOT also recognized the importance of quality and safety management of construction work and hold seminars regarding this issue.
- ◆ SPEM was prepared under Output 2 which is in charge of SACQI, and circular regarding construction environment is under preparation by Department of Science, Technology and Environment of MOC incorporating the SPEM.
- ◆ Every May is designated as construction work safety reinforcement month from 2017 and MOC/JICA had a workshop regarding safety management. It is a good chance to increase awareness for safety management widely and disseminate the outputs of this Project.

#### 14.4.5 Sustainability

**Sustainability** of the Project is expected **High** based on the following reasons;

(1) Political and Institutional Aspect

Viet Nam still has strong demand for infrastructure construction. In order to construct high quality infrastructure safely and smoothly, improvement of quality, safety, cost estimation and contract management of construction package will continue to be the high priority areas of Viet Nam. The establishment of the system and regulations incorporating the outputs of the Project to overcome these issues is consistent with the Vietnamese development policy. Thus, sustainability from political and institutional aspect is considered to be high.



(2) Organizational and Financial Aspect

During this Project, prime minister's office decided to start state budget project for the improvement of construction norm and price system. MOC, namely SACE is the executive office of this state budget project. SACE was upgraded from CED in July 2017, and currently has own budget and their function was enhanced. SACE and other relevant ministries and organizations will tackle the improvement of construction norm and price system, therefore improvement of cost estimation system is especially encouraged from Vietnamese government and it is expected to not only sustain but also expand the achievement of the Project after completion of the Project.

Concerning the training, AMC has already applied for the budget of training in 2018 including courses for CCQS Project's outputs. The amount of applied budget for training courses of CCQS Project's outputs is 1.3 billion VND in total and it includes cost for lecturer, venue, training materials, traveling, test and certificate. Therefore, as stated in 14.4.4, it is highly expected that AMC conduct trainings regularly after completion of the Project.

(3) Technical Aspect

It is necessary to revise and update current regulations and standards concerning management of construction projects to approach the international standards. Revision and updating of regulations are normal work for MOC, and through a number of CPMU meetings and discussions with JICA experts, C/Ps fully understood the contents of standard plan and guidelines and obtained plenty of information including Japanese and other countries experience. C/Ps have the ability to collect the necessary information and modify in accordance with the Vietnamese situation. Some studies of the previous project (Technical Cooperation Project for Capacity Enhancement in Construction Quality Assurance) were incorporated into the Law on Construction 2014 and some circulars under the law, and it brought a significant change from the Law on Construction 2003. Therefore, C/Ps has enough capability to carry out the revision and updating of regulations and institutionalize the achievement of the Project through it. They have already prepared roadmap to achieve overall goal and will try to implement it as planned.

AMC participated in the PCU and JSC from the commencement of the Project in consideration of the implementation of training after completion of the project. During the project period, AMC sometimes attended CPMU also and information regarding the Project was shared with AMC sufficiently. C/Ps already presented as lecturers in training workshops and their ability for conducting training program was enhanced. Therefore, AMC and C/Ps are considered to have technical capability to implement training by themselves.

## **14.5 Key Factors Affecting Implementation and Outcomes**

### **14.5.1 Contributing Factors**

- ♦ Consistency with the Project and Vietnamese development needs

As described in 14.4.1, CCQS Project is well aligned with the development policy of Viet Nam and development needs of MOC. In such circumstances, C/Ps were seriously participated in project activities with sense of ownership, and outputs were produced as planned with clear intension to utilize and legalize those in order to improve the construction industry in Viet Nam. It also increases the prospect for the achievement of Overall Goal and sustainability of the Project.

- ♦ Close communication among C/Ps

Close cooperation among C/Ps is considered as important assumptions of PDM. This Project has many C/Ps which is responsible for different outputs, but these outputs are mutually interrelated. Close cooperation between C/Ps facilitated the smooth implementation of the project. For example, PCU meetings were held regularly with attendance of all C/Ps and shared information of the Project. Cost for quality and safety management estimated by Output 1 and 2 was incorporated into output 3 by collaborative work of SACQI and SACE. SACQI also cooperated the activity of Output 4, which is in charge of CAMA. Training workshops were conducted successfully with cooperation of all C/Ps including ICD and AMC.

- ◆ Close communication between JICA experts and C/Ps  
During the Project period, 30~40 times of CPMU meetings were conducted for each Output activities. In addition to that, site visits for case studies, training workshops in various cities and trainings in Japan brought valuable opportunities to communicate each other. Frequent exchange of ideas and discussions between JICA experts and C/Ps facilitated the mutual understanding and technical transfer, and created a good relationship.
- ◆ Stable and fixed assignment of C/Ps  
Staff of MOC usually doesn't move to other department, so C/Ps didn't change basically during project period. It helped smooth continuation of activities and accumulation of knowledge and experience in organization. It is also expected that C/Ps involved in the Project utilize the achievement of the Project after the completion of the project.
- ◆ Public relation activities  
Public relation activities including website of MOC facilitated the dissemination of the project activities and achievements.
- ◆ Security condition  
Security condition in Viet Nam was stable during the Project period. Therefore, inputs of JICA experts were carried out as planned and it also helped JICA expert's activities in Viet Nam.

#### **14.5.2 Inhibiting Factors**

- ◆ Delay on set-up of PCU and Official Nomination of C/Ps  
Procedures for approval of Project Document as stipulated by Government of Viet Nam took more time than expected and set-up of PCU and Official Nomination of C/Ps were delayed.  
As soon as receiving Decision No.1898/QD-TTg dated October 4, 2016 of the Prime Minister on approval for investment policy for the implementation of the Project, the Project Preparation Members submitted the Minister of Construction to approve the Project Document, which was officially approved on October 28, 2016. Following the approval of the Project Document, PCU and CPMUs were established and member of PCU and CPMUs were nominated in October to December 2016.  
Although PCU was not officially set up, MOC Project Preparation Members fulfilled the functions of PCU and the meetings between MOC Project Preparation Members and JICA team were held once in a month to review status of the Project and discuss issues during implementation of the Project. The CPMU meetings were also held smoothly with almost constant members. Therefore, actual progress on activities was not affected.
- ◆ Delay on selection of case study project under state budget  
Selection of case study project under the state budget was completed and site visits were implemented in September and December 2015, which was planned by June 2015. In addition, one (1) more case study project under the state budget was selected and site visit was implemented in December 2016.  
MOC does not directly manage construction projects and with this reason selection of case study projects took long time unexpectedly, though MOC made active efforts to facilitate the site visits. However, as a result, more projects than planned and various type of projects were selected, and it was useful to analyze the actual construction work situation. Eventually it did not affect to the overall progress of the Project.
- ◆ Difficulties to assign staff to Project activities  
Many meetings and other activities were conducted during the Project period. C/Ps were not assigned as full-time staff for CCQS Project, therefore C/Ps sometimes had difficulties to participate in the Project activities due to other tasks. However, C/Ps managed their time and staff, and participated the Project actively.

## **14.6 For the Achievement of Overall Goals after the Project Completion**

### **14.6.1 Prospects to achieve Overall Goal**

Overall Goal is designated as “Construction projects are managed according to the international standards”. Indicators are decided based on the fatal labor accident frequency, Implementation of training and the result of comprehension test at the training.

As described in 14.4.4 (1), prospect to achieve Overall Goal is considered to be High when it is evaluated according to indicators. Improvement of construction sector is the objective not only for CCQS Project but also for MOC and MOC is required to accelerate their action to achieve this objective.

Meaning of Overall Goal is interpreted to have proper construction management to construct facilities with sufficient qualities meeting technical requirements in safe manner. In order to achieve this, cost estimate system is established with market oriented basis to ensure the proper construction management and all construction stakeholders (project owner / project management unit / supervision consultant / contractor) are considered equal partners with fair contract conditions.

CCQS Project aimed the capacity enhancement in quality management, safety and environmental management, cost estimation system and contract management of MOC and standard plans and guidelines for that were prepared as output documents. The achievement of the Project was spread to stakeholders through site visits and discussions at case studies, dialogues with the construction industries and training workshops during the project period. The result of feedback at training workshops shows that the Project Purpose which aims the improvement of regulations for management of public construction projects was achieved in a certain level.

After completion of CCQS Project, MOC will conduct trainings and workshops to disseminate the outputs and legalize contents of the outputs. Through these processes, capacity of construction stakeholders in whole Viet Nam will be enhanced in the same way that capacity of MOC staff has been enhanced through the CCQS Project. Hence, Overall Goal “Construction projects are managed according to the international standards” will be achieved within 3 to 4 year time.

In this view, verifiable indicators for Overall Goal are regarded as appropriate.

### **14.6.2 Plan of Operation and Implementation Structure of the Vietnamese Side to achieve Overall Goal**

MOC prepared the roadmaps for achievement and future actions for each Outputs as described in relevant Chapters as well as future trainings for dissemination of the output documents after completion for CCQS Project. The future actions planned in the roadmaps are original scope of work of MOC and AMC, therefore special implementation structure for achievement of Overall Goal is not required to be established.

### **14.6.3 Contributing and Obstructive Factors**

#### **(1) Contributing Factors**

- ♦ The Government of Viet Nam prepares to commence “State Budget Project for the Improvement of the Construction Norm and Price System”. This project will utilize the output of CCQS Project and contribute to achieve overall goal. Proposal for the State Budget Project is approved by the office of Prime Minister on December 18, 2017 and expected to be commenced from the beginning of 2018.
- ♦ CED has been upgraded to SACE. State Authority has own budget and SACE’s function and discretion is enhanced. Personnel will also be increased from current 15 staff to more than 40 staff. SACE will serve as the executive office of the above-mentioned state budget project.
- ♦ MOC staff usually doesn't move to other department and fixes in same department. Therefore, knowledge and experience obtained through this project will be expected to remain and spread in the organization.

- ◆ Every May is designated as construction work safety reinforcement month from 2017. If this campaign will continue in the future, it will increase awareness for safety management in construction work widely.

## (2) Obstructive Factors

- ◆ Legalization and institutionalization is essential to disseminate the achievements and recommendations of the Project and change the current practice toward international standard. When new regulations are institutionalized, it can be enforceable and related organizations, entities and individuals have to follow it. However, there are many law systems in Viet Nam and these are not always consistent with each other such as bidding law and construction law, because each system is managed by different ministries. Thus, it is necessary to study carefully considering the appropriateness to Viet Nam and timing of introduction for revision and formulation of regulations incorporating the achievement and recommendations of CCQS Project. In addition, feedback from public comments shall be reflected before enactment of new regulations as stipulated by Government of Viet Nam. If there are many negative feedback, reexamination is necessary. Therefore, it might take longer time than expected to institutionalize the achievement and recommendations of CCQS Project.
- ◆ A certain time is necessary for related organizations, POs, PMUs, consultants and contractors to correspond to new system and regulations, and it might cause some disruption such as the shortage of qualified engineers/contractors which satisfy the newly introduced requirement, or delay of construction package due to inexperience of revised system and procedures. Especially, it is anticipated that there are difficulties to enhance capacity of small and medium enterprises due the limited capacity of them. Outputs documents were prepared not too much advanced or radical to avoid such problem. However, sufficient preparation and explanation are necessary before the introduction of new and/or revised system and regulations.
- ◆ Some new method might be difficult to incorporate immediately due to the lack of capacity of stakeholders. For example, Japanese cost trend survey form was introduced by JICA experts, but some items are difficult to fill in because of the lack of capability. It requires more study and support from JICA expert.

## 14.7 Recommendations and Lessons Learned

Recommendations and lessons learned regarding project activities and outputs are described in relevant Chapters, therefore those concerning to whole project are stated here.

### (1) Recommendations

- ◆ For smooth transition to new regulations and systems

Though the achievement and recommendations of CCQS Project is institutionalized, a certain time is required for state authorities, POs, PMUs, entities and individuals related to the construction work to change the mindset that have been accustomed from the past methods and experiences and adjust to new regulations and systems. Therefore, it is recommended for MOC to conduct trainings, workshops and seminars in various regions with participation of various stakeholders to explain and disseminate the details of new regulations and systems for smooth transition.

- ◆ Retention of close communication between C/Ps

The achievement of CCQS Project includes several aspects of construction work and many C/Ps of MOC cooperated and shared information during the implementation of CCQS Project. In order to utilize and expand the achievement after completion of the Project, it is recommended to maintain the close communication and cooperation between C/Ps such as joint holding of trainings and seminars.

- ◆ Assignment of full-time staff from counterparts

During the Project period, C/Ps had difficulties to participate in the activities since they were assigned for CCQS Project part-time basis. It is recommended to assign full-time staff from counterparts to concentrate to the Project activities and obtain deeper and wider technical transfer from JICA experts for the future project.

## (2) Lessons Learned

### ♦ Implementation structure and clarification of responsibility

CCQS Project had five (5) different but interrelated Outputs. It was very effective that responsible and other concerning C/Ps were clarified from the commencement of the Project for each output and activities as CPMU, and information regarding the Project was shared through regular meeting at PMU and JSC. Involvement of AMC was also effective to secure the sustainability of the Project. It is important to clarify the responsibility of C/Ps if there are various outputs which approach to the Project Purpose from the different aspect and many C/Ps are involved in the project. At the same time, a system to share information and secure the unity of the project is also necessary. The organization which is not directly related to the Output but play important role after completion of the project like AMC shall be involved from the implementation stage of the project for deeper understanding of the project and development of good relationship with other C/Ps.

### ♦ Project Monitoring

Monitoring of CCQS Project was conducted using Monitoring Sheet newly introduced for JICA technical cooperation project from 2014. This method was useful for both JICA experts and C/Ps to review the status of outputs, issues to be solved and progress of the project and modify the project outputs and activities if necessary.

## 14.8 Conclusions

The project purpose was considered to be achieved. CCQS Project was highly relevant with Vietnamese socio-economic development strategy and plan, as well as the development needs of MOC. The effectiveness is regarded as high since all outputs were produced as planned although there are some ahead and behind, and moreover, some recommendations and ideas proposed in outputs documents were already incorporated into Decree/Circular such as Circular 4 for safety management. It shows that improvement of regulations for management of public construction projects are progressing. The efficiency was fair taking into consideration of the extension of the Project period, and gap of the Project period between Vietnamese fiscal year and CCQS Project period. After completion of the Project, C/Ps intend to institutionalize the achievement of the Project in the near future according to the roadmaps, therefore impact and sustainability are expected to be high.

The institutionalization of the achievement of the Project is absolutely essential, but not only institutionalization but also activities such as trainings and workshops are also indispensable to explain and disseminate the new regulations and systems. Management of construction project will be significantly improved when all these processes are implemented, and mindset and behavior of all stakeholders are changed. The Project team members believe that the Project will contribute to the development of construction industry in Viet Nam.



## **Chapter 15 Recommendations and Lessons Learned**

Reference is made to the implemented activities during the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project) in three years from April 2015 to April 2018 and the whole Chapters in the Project Completion Report (PCR). Recommendations and lessons learned from CCQS Project are compiled herein under for whole scopes, leaving those for each Output in individual Chapter.

### **15.1 Recommendations**

Recommendations after completion of CCQS Project are stated separately as Continuation of Trainings and Seminars, Utilization and Legalization of Output Documents, and Other Matters.

#### **[Continuation of Trainings and Seminars]**

- ♦ During CCQS Project, the counterparts (C/Ps) from International Coordination Department (ICD), State Authority for Construction Economics (SACE, upgraded from Construction Economics Department (CED) in July 2017), State Authority of Construction Quality Inspection (SACQI), Construction Activity Management Authority (CAMA) and Academy of Managers for Construction and Cities (AMC) in the Ministry of construction (MOC) cooperated and shared information each other. For future trainings and seminars, it is highly recommended to maintain the close communication and cooperation between C/Ps, as having done in the past three years.
- ♦ AMC and the related organizations (SACE, SACQI, CAMA and some others) in MOC shall implement trainings and seminars on Output Documents in the year 2018 onward for dissemination.
- ♦ It is further recommended that these trainings and seminars shall be organized not only by MOC but also other ministries, people's committees, relevant universities and related institutions with assistance from AMC of MOC for effective dissemination.
- ♦ When revising regulations incorporating the contents of the Output Documents, AMC and the related organizations in MOC undertakes that the program and materials for trainings and seminars shall be modified and upgraded so that purposes of trainings and seminars will be not only dissemination but also application of new regulations.
- ♦ In order to disseminate the Output Documents, some other devices such as web site in MOC etc. shall be fully utilized.

#### **[Utilization and Legalization of Output Documents]**

- ♦ Relevant organizations of MOC shall apply the related Output Documents compiled in CCQS Project within the projects under control on trial basis, in order to confirm the contents are appropriate and/or to be adjusted in certain parts.
- ♦ Relevant organizations of MOC shall utilize the related Output Documents as their internal supervision and inspection procedures in the projects under control with the same reasons the above.
- ♦ For legalization, a certain time is required for state authorities (SAs), project owners (POs), project management units (PMUs), entities and individuals related to the construction work to change the mindset that have been accustomed from the past methods and experiences and adjust to new regulations and systems. Therefore, it is recommended for MOC to have sufficient time to explain details of new regulations and systems for smooth transition in various regions with participants of various stakeholders in whole Viet Nam.
- ♦ For some Output Documents for legalization, other ministries and departments shall be involved and therefore it is important to have discussions and meetings with them in timely manner.

- ♦ Relevant organizations of MOC shall prepare legal documents with the contents of Output Documents compiled in CCQS Project in accordance with the roadmaps shown in Chapter 6 to 10 of PCR. In case the roadmap to be revised, the change shall be informed to the stakeholders accordingly.

#### **[Other Matters]**

- ♦ Lots of discussions and meetings were carried out in the course of compilation of the Output Documents during CCQS Project between C/Ps and Japan International Cooperation Agency (JICA) experts, though training workshops and dialogues with construction industries were conducted for dissemination to those other than C/Ps. Therefore, various capacities (construction management including quality and safety / environment management, cost estimation, evaluation of engineering capacity, contract management etc.) of C/Ps have been enhanced quite substantially. From now on, similar process shall be repeated between the C/Ps and various stakeholders in whole Viet Nam for enhancement of their capacities, and the C/Ps shall be core members for this process.
- ♦ MOC shall set up forum for dialogues with construction industries in the future. Dialogues were arranged only in Ha Noi in CCQS Project, however future dialogues shall be held in Ho Chi Minh City and other local cities regularly.
- ♦ The questionnaire survey for the stakeholders in the construction works such as representatives from the association of consultants and contractors, researchers/academies shall be conducted to have interested points on construction management and so on.
- ♦ MOC shall arrange to review the Output Documents periodically, as these kinds of documents shall be updated and upgraded time to time, following social and technical development in related fields.

### **15.2 Lessons Learned**

Lessons learned through CCQS Project are stated as follows.

- ♦ When case studies on construction projects are planned, the following steps shall be taken.
  - To make purpose for case studies clear and focus on items to search and discuss
  - To identify required fields (building, transport etc.) of construction works to achieve the purpose
  - To approach responsible organizations and request them to select suitable projects fitting the purpose
- ♦ In order to have general level of the subjects (e.g. quality management) in a country for study, information of education and training programs on the subjects in construction works shall be collected from organizations for educations and trainings, such as institutions, universities, project owners, individual consultants and contractors.
- ♦ At the commencement, interested parties for the subjects (e.g. quality management) in construction works shall be widely searched and discussions be carried out with them in regular basis during implementation of the project.
- ♦ In Viet Nam, legalization is essential to apply anything, however, all sectors including public and private have to adjust themselves according to the new regulation once a legalization is applied. Enough periods for dissemination, drafting regulations and some adjustments with related sectors shall be secured when planning legalization.
- ♦ There observed some differences between actual implementations and regulations. Interviews and site-surveys on sample projects as many as possible are recommended to study actual practice. In addition, measures to amend actual implementations will be required other than modifications of regulations.
- ♦ From the review on the training workshops, it is recommended in future to allocate sufficient time for questions and answers. Further, as the number of participants declined as time gone, it is necessary to consider how to keep number of participants (time allocation, total program time,



how to attract their interests on presentation detail etc.).

- ♦ The objectively verifiable indicators or similar figures for activities in the project may be set up for measuring achievement.
- ♦ Monitoring of CCQS Project was conducted using Monitoring Sheet newly introduced for JICA technical cooperation project from 2014. This method was useful for both JICA experts and C/Ps to review the status of outputs, issues to be solved and progress of the project and modify the project outputs and activities if necessary.

### **15.3 Conclusion**

Meaning of Project Overall Goal (Construction projects are managed according to the international standards) is interpreted to have proper construction management to construct facilities with sufficient qualities meeting technical requirements in safe manner. In order to achieve this, cost estimation system is established with market oriented economy to ensure the proper construction management, and all construction stakeholders (project owner / project management unit / supervision consultant / contractor) are considered equal partners with fair contract conditions. When output documents in CCQS Project are disseminated and legalized together with enhancement of capacities of stakeholders in construction field in Viet Nam, the Overall Goal is believed to be achieved with the international standard customized to Viet Nam.

The institutionalization of the achievement of the Project is absolutely essential, but not only institutionalization but also activities such as trainings, workshops and seminars are also indispensable to explain and disseminate the new regulations and systems. Management of construction project will be significantly improved when all these processes are implemented, and mindset and behavior of all stakeholders are changed.

After all, the Project team believes that CCQS Project contributed to the development of construction industry in Viet Nam in certain extents, and hopes that the construction works in Viet Nam will be managed according to the customized international standard.



## **Appendix 1 Project Design Matrix**

**Project Design Matrix version 1 on 30 September 2015**

**Project Design Matrix version 2 on 31 March 2016**

**Project Design Matrix version 3 on 30 September 2016**

**Project Design Matrix version 4 on 31 March 2017**

**Project Design Matrix version 5 on 30 September 2017**

**Project Design Matrix version 6 on 31 January 2018**



**Draft Project Design Matrix (PDM) ver.1**

**Project Title: Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects**

**Project Period: April 2015 to March 2018 (36 months)**

**Target Group: Engineers from CED, SACQI, and CAMA**

**Target Area: Whole Country**

**Date: 30 September 2015**

**Target Organization: Construction Economics Department (CED), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)**

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b></p> <p>Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.</p> <p>2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project.</p> <p>*Similar organization; Training center for staff of contracting ministry/agency</p> <p>3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics</p> <p>2. Training record of AMC and the similar organizations.</p> <p>3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>
<p><b>Project Purpose</b></p> <p>Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p> <p>*the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic</p> <p>2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders.</p> <p>2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>
<p><b>Outputs</b></p> <p>1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.</p>	<p>1-1. QM plan is prepared by December 2015.</p> <p>1-2. Cost of QM for the case-studied projects is estimated by February 2016.</p>	<p>1-1. QM plan and the prepared date</p> <p>1-2. Estimated QM cost and the completed date</p>	<p>- C/P bodies work in close cooperation each other.</p>
<p>2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) of construction works is enhanced.</p>	<p>2-1. SM plan is prepared by December 2015.</p> <p>2-2. Cost of SM for the case-studied projects is estimated by February 2016.</p>	<p>2-1. SM plan and the prepared date</p> <p>2-2. Estimated SM cost and the completed date</p>	
<p>3. (CED) Capacity for integrating construction management (CM) into the cost estimation for indirect construction contractor works is enhanced.</p>	<p>3-1. “Guideline (G/L) on the cost estimation for indirect construction contractor works” is submitted to MOC by March 2016 for approval.</p> <p>3-2. More than 70 % of participants of training on “Guideline on the cost estimation for indirect construction contractor works” pass the comprehension test.</p> <p>3-3. Draft circular for authorizing “Guideline on the cost estimation for indirect construction contractor works” is submitted to MOC by <u>May 2016</u> for approval.</p>	<p>3-1. “Guideline on the cost estimation for indirect construction contractor works” and the submitted date &amp; the minutes of JSC</p> <p>3-2. Participants list and the test result for each test</p> <p>3-3. Draft circular and the submitted date &amp; the minutes of JSC</p>	

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. Guideline on “the evaluation method on engineering capacity of const.-contractors” is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of training on “the evaluation method on engineering capacity of const.-contractors” passes the comprehension test. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of “const.-contractor grading system” is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. “The evaluation method on engineering capacity of const.-contractors” and the submitted date & the minutes of JSC 4-2. Participants list and the test result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of “const.-contractor grading system” and the submitted date & the minutes of JSC 4-5. Draft regulation on qualification for PMUs and the completed date	
5. (CED & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. “Guideline on contract management” is submitted to MOC by February 2017 for approval. 5-2. “Guideline on alternations of contract” is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of training participants of the above two guidelines pass the comprehension test.	5-1. & 5-2. “Guideline on contract management” & “Guidelines on alternations of contract” and the submitted date & the minutes of JSC 5-3. Participants list and the test result	
Activities <small>(Underlined items: either created by MOC or products of the Phase 1)</small>	Inputs		Important Assumptions
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare QM plan for the case-studied projects following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 2-1. To review the current practices of SM in construction works as case studies based on the <u>Safety Manual</u> , and to identify issues 2-2. To prepare SM plan for the case-studied projects following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan. 3-2. To formulate guideline on the cost estimation for indirect construction contractor works 3-3. To prepare draft circular for authorizing “G/L on the cost estimation for indirect construction contractor works” 3-4. To carry out trainings on “G/L on the cost estimation for indirect construction contractor works” for the MOC staff. 3-5. To hold seminars on the above G/L for the dissemination, and compile the training program and the seminar materials	(The Japanese side) 1. Long-term Expert - Chief Advisor 2. Shor-term Experts 1) Team leader / Construction management 2) Deputy team leader /Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation 4) Quality management(I) 5) Quality management (II) 6) Safety management 7) Warranty and insurance 8) Construction contractor grading system 9) Training and seminar arrangement (I) 10) Training and seminar arrangement (II) / Public relations 3. C/P Training:10 persons/year X 3times	(The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.

<b>Activities</b> (Underlined items: either created by MOC or products of the Phase 1)	<b>Inputs</b>		<b>Pre-condition</b>
4-1. To identify problems on (i)evaluation of const.-contractors <sup>*4</sup> engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out trainings of evaluation method on engineering capacity of const.-contractors for the MOC staff 4-6. To hold seminars on the evaluation method of engineering capacity of const.-contractors 4-7. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism, and compile the training program and seminars materials 4-8. To review function of PMU 4-9. To <u>prepare improvement of regulation on qualification necessary for PMUs</u>	4. Cost for holding trainings and seminars under the Project		- Jurisdiction of MOC is maintained.
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate guideline on contract management of construction contractor works 5-5. To formulate guideline on alterations of contract of construction contractor works 5-6. To carry out trainings on contract management and alteration of contract of construction contractor works for the MOC staff 5-7. To hold seminars on contract management and alteration of contract of construction contractor works, and compile the training program and seminars materials			

\*1 CM: construction management

\*2 QM: quality management,

\*3 SM: safety management,

\*4 const.-contractor: construction contractor





### Draft Project Design Matrix (PDM) ver. 2

**Project Title:** Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects

**Project Period:** April 2015 to March 2018 (36 months)

**Target Area:** Whole Country

**Target Organization:** Construction Economics Department (CED), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)

**Target Group:** Engineers from CED, SACQI, and CAMA

**Date:** 31 March 2016

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b>			
Construction projects are managed according to the international standards.	<ol style="list-style-type: none"> <li>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.</li> <li>2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project. *Similar organization; Training center for staff of contracting ministry/agency</li> <li>3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</li> </ol>	<ol style="list-style-type: none"> <li>1. Labor and safety statistics</li> <li>2. Training record of AMC and the similar organizations.</li> <li>3. Participants list and the test result</li> </ol>	- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.
<b>Project Purpose</b>			
Regulations for management of public construction projects are improved.	<ol style="list-style-type: none"> <li>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project. *the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic</li> <li>2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</li> </ol>	<ol style="list-style-type: none"> <li>1. Questionnaire and interview to the stakeholders.</li> <li>2. Questionnaire and interview to the project owners / employers.</li> </ol>	- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.
<b>Outputs</b>			
1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.	<ol style="list-style-type: none"> <li>1-1. <b>QM Plan</b> is prepared by December 2015.</li> <li>1-2. Cost of QM for case-studied projects is estimated by February 2016.</li> </ol>	<ol style="list-style-type: none"> <li>1-1. <b>QM</b> plan and the prepared date</li> <li>1-2. Estimated QM cost and the completed date</li> </ol>	- C/P bodies work in close cooperation each other.
2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) of construction works is enhanced.	<ol style="list-style-type: none"> <li>2-1. <b>SM plan</b> is prepared by December 2015.</li> <li>2-2. Cost of SM for case-studied projects is estimated by February 2016.</li> </ol>	<ol style="list-style-type: none"> <li>2-1. <b>SM</b> plan and the prepared date</li> <li>2-2. Estimated SM cost and the completed date</li> </ol>	
3. (CED) Capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.	<ol style="list-style-type: none"> <li>3-1. “Guideline (GL) on the cost estimation for indirect construction contractor works” is submitted to MOC by March 2016 for approval.</li> <li>3-2. More than 70 % of participants of training on “Guideline on the cost estimation for indirect construction contractor works” pass the comprehension test.</li> <li>3-3. Draft circular for authorizing “Guideline on the cost estimation for indirect construction contractor works” is submitted to MOC by May 2016 for approval.</li> </ol>	<ol style="list-style-type: none"> <li>3-1. “Guideline on the cost estimation for indirect construction contractor works” and the submitted date &amp; the minutes of JSC</li> <li>3-2. Participants list and the test result</li> <li>3-3. Draft circular and the submitted date &amp; the minutes of JSC</li> </ol>	

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of training on "the evaluation method on engineering capacity of const.-contractors" pass the comprehension test. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the test result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date	
5. (CED & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on contract alternation" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of training participants of the above two guidelines pass the comprehension test.	5-1. & 5-2. "Guideline on contract management" & "Guideline on contract alternation" and the submitted date & the minutes of JSC 5-3. Participants list and the test result	
Activities		Inputs	
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare QM plan for the case-studied projects following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 2-1. To review the current practices of SM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SM plan for the case-studied projects following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan 3-2. To formulate "Guideline (GL) on the cost estimation for indirect construction contractor works" 3-3. To prepare draft circular for authorizing "GL on the cost estimation for indirect construction contractor works" 3-4. To carry out training on "GL on the cost estimation for indirect construction contractor works" for the MOC staff 3-5. To hold seminars on the above GL for dissemination, and compile the training program and the seminar materials	(The Japanese side) 1. Long-term Expert - Chief Advisor 2. Short-term Experts 1) Team leader / Construction management 2) Deputy team leader / Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation (1) 4) Quality management(1) 5) Quality management (2) 6) Safety management (1) 7) Warranty and insurance 8) Construction contractor grading system 9) Training and seminar arrangement (1) 10) Training and seminar arrangement (2) / Public relations 3. C/P Training: 10 persons/year X 3times 4. Cost for holding trainings and seminars under the Project	(The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.

Activities	Inputs		Pre-condition
4-1. To identify problems on (i)evaluation of const.-contractors <sup>*4</sup> engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out training of evaluation method on engineering capacity of const.-contractors for the MOC staff 4-6. To hold seminars on the evaluation method on engineering capacity of const.-contractors 4-7. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism 4-8. To review function of PMU 4-9. To prepare improvement of regulation on qualification necessary for PMUs			- Jurisdiction of MOC is maintained.
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate guidelines on contract management and alterations of contract of construction contractor works 5-5. To carry out training on guidelines on contract management and alterations of contract of construction contractor works for the MOC staff 5-6. To hold seminars on guidelines on contract management and alterations of contract of construction contractor works 5-7. To compile the training program and seminars materials of guidelines on contract management and alterations of contract of construction contractor works			

\*1 CM: construction management

\*2 QM: quality management,

\*3 SM: safety management,

\*4 const.-contractor: construction contractor



### Draft Project Design Matrix (PDM) ver. 3

**Project Title: Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects**

**Project Period: April 2015 to March 2018 (36 months)**

**Target Area: Whole Country**

**Target Organization: Construction Economics Department (CED), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)**

**Target Group: Engineers from CED, SACQI, and CAMA**

**Date: 30 September 2016**

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b>	<ol style="list-style-type: none"> <li>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.</li> <li>2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project.</li> </ol> <p>*Similar organization; Training center for staff of contracting ministry/agency</p> <ol style="list-style-type: none"> <li>3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</li> </ol>	<ol style="list-style-type: none"> <li>1. Labor and safety statistics</li> <li>2. Training record of AMC and the similar organizations.</li> <li>3. Participants list and the test result</li> </ol>	- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.
<b>Project Purpose</b>	<ol style="list-style-type: none"> <li>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</li> </ol> <p>*the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic</p> <ol style="list-style-type: none"> <li>2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</li> </ol>	<ol style="list-style-type: none"> <li>1. Questionnaire and interview to the stakeholders.</li> <li>2. Questionnaire and interview to the project owners / employers.</li> </ol>	- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.
<b>Outputs</b>	<ol style="list-style-type: none"> <li>1-1. Standard Plan for QM (SPQM) is prepared by December 2015.</li> <li>1-2. Cost of QM for case-studied projects is estimated by February 2016.</li> <li>1-3. Guideline for Quality Inspection (GLQI) for State Authorities &amp; PO/PMU is prepared by September 2017.</li> </ol>	<ol style="list-style-type: none"> <li>1-1. SPQM and the prepared date</li> <li>1-2. Estimated QM cost and the completed date</li> <li>1-3. GLQI and the prepared date</li> </ol>	- C/P bodies work in close cooperation each other.
1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.	<ol style="list-style-type: none"> <li>2-1. Standard Plan for SM (SPSM) is prepared by December 2015.</li> <li>2-2. Cost of SM for case-studied projects is estimated by February 2016.</li> <li>2-3. Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities &amp; PO/PMU is prepared by September 2017.</li> </ol>	<ol style="list-style-type: none"> <li>2-1. SPSM and the prepared date</li> <li>2-2. Estimated SM cost and the completed date</li> <li>2-3. GLSEI and the prepared date</li> </ol>	
2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) of construction works is enhanced.	<ol style="list-style-type: none"> <li>3-1. “Guideline (GL) on the cost estimation for indirect construction contractor works” is submitted to MOC by March 2016 for approval.</li> <li>3-2. “Guideline (GL) on the cost estimation for direct construction contractor works” is submitted to MOC by September 2017 for approval.</li> <li>3-3. More than 70 % of participants of training/seminar on “Guideline on the cost estimation for construction contractor works” understand the contents.</li> <li>3-4. Draft circular for authorizing “Guideline on the cost estimation for construction works” is submitted to MOC by October 2017 for approval.</li> </ol>	<ol style="list-style-type: none"> <li>3-1. &amp; 3-2. “Guideline on the cost estimation for direct / indirect construction contractor works” and the submitted date &amp; the minutes of JSC</li> <li>3-3. Participants list and the questionnaire result</li> <li>3-4. Draft circular and the submitted date &amp; the minutes of JSC</li> </ol>	
3. (CED) Capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.			

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of training/seminar on "the evaluation method on engineering capacity of const.-contractors" understand the contents. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the questionnaire result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date	
5. (CED & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on contract alternation" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of training/seminar participants of the above guideline understand the contents.	5-1. & 5-2. "Guideline on contract management" & "Guideline on alternations of contract" and the submitted date & the minutes of JSC 5-3. Participants list and the questionnaire result	
Activities		Inputs	
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare SPQM following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 1-4. To prepare Guideline for Quality Inspection (GLQI) for State Authorities & PO/PMU	(The Japanese side) 1. Long-term Expert - Chief Advisor 2. Shor-term Experts 1) Team leader / Construction management 2) Deputy team leader /Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation (1) 4) Quality management(1) 5) Quality management (2) 6) Quality management (3) 7) Safety management (1) 8) Safety management (2) 9) Safety management (3) 10) Warranty and insurance 11) Construction contractor grading system 12) Training and seminar arrangement (1) 13) Training and seminar arrangement (2) / Public relations / Cost estimation (2)	(The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.
2-1. To review the current practices of SM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SPSM following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 2-4. To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works 2-5. To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & PO/PMU			
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan 3-2. To formulate "Guideline (GL) on the cost estimation for indirect construction contractor works" 3-3. To formulate "Guideline (GL) on the cost estimation for direct construction contractor works" 3-4. To prepare draft circular for authorizing "GL on the cost estimation for construction works" 3-5. To carry out training/seminar on "GL on the cost estimation for construction contractor works" for dissemination 3-6. To compile the training program and the seminar materials on the above G/L			

Activities	Inputs		Pre-condition
4-1. To identify problems on (i)evaluation of const.-contractors <sup>*4</sup> engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out training/seminar of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs			- Jurisdiction of MOC is maintained.
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate guideline on contract management and alteration of construction contractor works 5-5. To carry out training/seminar on guideline on contract management and alteration of construction contractor works for dissemination 5-6. To compile the training program and seminars materials of guideline on contract management and alteration of construction contractor works			

\*1 CM: construction management

\*2 QM: quality management,

\*3 SM: safety management,

\*4 const.-contractor: construction contractor





**Project Design Matrix (PDM) ver. 4**

**Project Title: Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects**

**Project Period: April 2015 to March 2018 (36 months)**

**Target Group: Engineers from CED, SACQI, and CAMA**

**Target Area: Whole Country**

**Date: 31 March 2017**

**Target Organization: Construction Economics Department (CED), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)**

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b> Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project. 2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project. *Similar organization; Training center for staff of contracting ministry/agency 3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics 2. Training record of AMC and the similar organizations. 3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>
<p><b>Project Purpose</b> Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project. *the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic 2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders. 2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>
<p><b>Outputs</b> 1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced. 2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) of construction works is enhanced. 3. (CED) Capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.</p>	<p>1-1. Standard Plan for QM (SPQM) is prepared by December 2015. 1-2. Cost of QM for case-studied projects is estimated by February 2016. 1-3. Guideline for Quality Inspection (GLQI) for State Authorities &amp; PO/PMU is prepared by September 2017. 2-1. Standard Plan for SM (SPSM) is prepared by December 2015. 2-2. Cost of SM for case-studied projects is estimated by February 2016. 2-3. Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities &amp; PO/PMU is prepared by September 2017. 3-1. “Guideline on the cost estimation for indirect construction contractor works (GLCE-1)” is submitted to MOC by March 2016 for approval. 3-2. “Guideline on the cost estimation for direct construction contractor works (GLCE-2)” is submitted to MOC by September 2017 for approval. 3-3. More than 70 % of participants of training/seminar on “Guideline on the cost estimation for construction contractor works (GLCE)” understand the contents. 3-4. Draft circular for authorizing GLCE is submitted to MOC by October 2017 for approval.</p>	<p>1-1. SPQM and the prepared date 1-2. Estimated QM cost and the completed date 1-3. GLQI and the prepared date 2-1. SPSM and the prepared date 2-2. Estimated SM cost and the completed date 2-3. GLSEI and the prepared date 3-1. &amp; 3-2. “Guideline on the cost estimation for direct / indirect construction contractor works” and the submitted date &amp; the minutes of JSC 3-3. Participants list and the questionnaire result 3-4. Draft circular and the submitted date &amp; the minutes of JSC</p>	<p>- C/P bodies work in close cooperation each other.</p>

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of training/seminar on "the evaluation method on engineering capacity of const.-contractors" understand the contents. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the questionnaire result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date	
5. (CED & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on contract alternation" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of training/seminar participants of the above guideline understand the contents.	5-1. & 5-2. "Guideline on contract management" & "Guideline on contract alternation" and the submitted date & the minutes of JSC 5-3. Participants list and the questionnaire result	
Activities		Inputs	
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare SPQM following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 1-4. To prepare Guideline for Quality Inspection (GLQI) for State Authorities & PO/PMU	(The Japanese side) 1. Long-term Expert - Chief Advisor 2. Shor-term Experts 1) Team leader / Construction management 2) Deputy team leader /Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation (1) 4) Quality management(1) 5) Quality management (2) 6) Quality management (3) 7) Quality management (4) 8) Quality management (5) 9) Safety management (1) 10) Safety management (2)/Environment management (1) 11) Safety management (3)/Environment management (2) 12) Warranty and insurance 13) Construction contractor grading system 14) Training and seminar arrangement (1) 15) Training and seminar arrangement (2) / Public relations / Cost estimation (2)	(The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.
2-1. To review the current practices of SM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SPSM following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 2-4. To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works 2-5. To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & PO/PMU			
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan 3-2. To formulate "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" 3-3. To formulate "Guideline on the cost estimation for direct construction contractor works (GLCE-2)" 3-4. To prepare draft circular for authorizing "Guideline on the cost estimation for construction works (GLCE)" 3-5. To carry out training/seminar on GLCE for dissemination 3-6. To compile the training program and the seminar materials on the above GLCE			

Activities	Inputs		Pre-condition
4-1. To identify problems on (i)evaluation of const.-contractors <sup>*4</sup> engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out training/seminar of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs	3. C/P Training:10 persons/year x 3times  4. Cost for holding trainings and seminars under the Project		- Jurisdiction of MOC is maintained.
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate Guideline on contract management and alteration of construction contractor works (GLCM) 5-5. To carry out training/seminar on Guideline on contract management and alteration of construction contractor works (GLCM) for dissemination 5-6. To compile the training program and seminars materials of Guideline on contract management and alteration of construction contractor works (GLCM)			

- \*1 CM: construction management
- \*2 QM: quality management,
- \*3 SM: safety management,
- \*4 const.-contractor: construction contractor



**Project Design Matrix (PDM) ver. 5**

**Project Title: Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects**

**Project Period: April 2015 to March 2018 (36 months)**

**Target Group: Engineers from SACE, SACQI, and CAMA**

**Target Area: Whole Country**

**Date: 30 September 2017**

**Target Organization: State Authority for Construction Economics (SACE), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)**

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b> Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project. 2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Cost Estimation”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project. *Similar organization; Training center for staff of contracting ministry/agency 3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics 2. Training record of AMC and the similar organizations. 3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>
<p><b>Project Purpose</b> Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project. *the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic 2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders. 2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>
<p><b>Outputs</b> 1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced. 2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) and the environment management (EM) of construction works is enhanced. 3. (SACE) Capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.</p>	<p>1-1. Standard Plan for QM (SPQM) is prepared by December 2015. 1-2. Cost of QM for case-studied projects is estimated by February 2016. 1-3. Guideline for Quality Inspection (GLQI) for State Authorities (SAs) &amp; POs/PMUs is prepared by September 2017. 2-1. Standard Plan for SM (SPSM) is prepared by December 2015. 2-2. Cost of SM for case-studied projects is estimated by February 2016. 2-3. Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities (SAs) &amp; POs/PMUs is prepared by September 2017. 3-1. “Guideline on the cost estimation for indirect construction contractor works (GLCE-1)” is submitted to MOC by March 2016 for approval. 3-2. “Guideline on the cost estimation for direct construction contractor works (GLCE-2)” is submitted to MOC by September 2017 for approval. 3-3. More than 70 % of participants of trainings/seminars on “Guideline on the cost estimation for construction contractor works (GLCE)” understand the contents. 3-4. Draft circular for authorizing GLCE is submitted to MOC by October 2017 for approval.</p>	<p>1-1. SPQM and the prepared date 1-2. Estimated QM cost and the completed date 1-3. GLQI and the prepared date 2-1. SPSM and the prepared date 2-2. Estimated SM cost and the completed date 2-3. GLSEI and the prepared date 3-1. &amp; 3-2. “Guideline on the cost estimation for direct / indirect construction contractor works” and the submitted date &amp; the minutes of JSC 3-3. Participants list and the questionnaire result 3-4. Draft circular and the submitted date &amp; the minutes of JSC</p>	<p>- C/P bodies work in close cooperation each other.</p>

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of trainings/seminars on "the evaluation method on engineering capacity of const.-contractors" understand the contents. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the questionnaire result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date	
5. (SACE & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on contract alternation" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of participants of trainings/seminars on the above guideline understand the contents.	5-1. & 5-2. "Guideline on contract management" & "Guideline on contract alternation" and the submitted date & the minutes of JSC 5-3. Participants list and the questionnaire result	
Activities		Inputs	
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare SPQM following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 1-4. To prepare Guideline for Quality Inspection (GLQI) for SAs & POs/PMUs	(The Japanese side) 1. Long-term Expert - Chief Advisor 2. Shor-term Experts 1) Team leader / Construction management 2) Deputy team leader /Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation (1) 4) Quality management(1) 5) Quality management (2) 6) Quality management (3) 7) Quality management (4) 8) Quality management (5) 9) Safety management (1) 10) Safety management (2)/Environment management (1) 11) Safety management (3)/Environment management (2) 12) Warranty and insurance 13) Construction contractor grading system 14) Training and seminar arrangement (1) 15) Training and seminar arrangement (2) / Public relations / Cost estimation (2)	(The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.
2-1. To review the current practices of SM and EM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SPSM following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 2-4. To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works 2-5. To prepare Guideline for Safety and Environmental Inspection (GLSEI) for SAs & POs/PMUs			
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan 3-2. To formulate "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" 3-3. To formulate "Guideline on the cost estimation for direct construction contractor works (GLCE-2)" 3-4. To prepare draft circular for authorizing "Guideline on the cost estimation for construction contractor works (GLCE)" 3-5. To carry out trainings/seminars on the above GLCE for dissemination 3-6. To compile the training program and the seminar materials on the above GLCE			

Activities	Inputs		Pre-condition
4-1. To identify problems on (i)evaluation of const.-contractors <sup>*4</sup> engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out trainings/seminars of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs	3. C/P Training:10 persons/year x 3times  4. Cost for holding trainings and seminars under the Project		- Jurisdiction of MOC is maintained.
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) 5-5. To carry out trainings/seminars on the above GLCM for dissemination 5-6. To compile the training program and seminars materials on the above GLCM			

- \*1 CM: construction management
- \*2 EM: environment management
- \*3 QM: quality management,
- \*4 SM: safety management,
- \*5 const.-contractor: construction contractor





**Project Design Matrix (PDM) ver. 6**

**Project Title: Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects**

**Project Period: April 2015 to April 2018 (36 months)**

**Target Group: Engineers from SACE, SACQI, and CAMA**

**Target Area: Whole Country**

**Date: 31 January 2018**

**Target Organization: State Authority for Construction Economics (SACE), State Authority of Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)**

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><b>Overall Goal</b> Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project. 2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Cost Estimation”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project. *Similar organization; Training center for staff of contracting ministry/agency 3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics 2. Training record of AMC and the similar organizations. 3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>
<p><b>Project Purpose</b> Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project. *the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic 2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders. 2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>
<p><b>Outputs</b> 1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced. 2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) and the environment management (EM) of construction works is enhanced. 3. (SACE) Capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.</p>	<p>1-1. Standard Plan for QM (SPQM) is prepared by December 2015. 1-2. Cost of QM for case-studied projects is estimated by February 2016. 1-3. Guideline for Quality Inspection (GLQI) for State Authorities (SAs) &amp; POs/PMUs is prepared by September 2017. 2-1. Standard Plan for SM (SPSM) is prepared by December 2015. 2-2. Cost of SM for case-studied projects is estimated by February 2016. 2-3. Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities (SAs) &amp; POs/PMUs is prepared by September 2017. 3-1. “Guideline on the cost estimation for indirect construction contractor works (GLCE-1)” is submitted to MOC by March 2016 for approval. 3-2. “Guideline on the cost estimation for direct construction contractor works (GLCE-2)” is submitted to MOC by September 2017 for approval. 3-3. More than 70 % of participants of trainings/seminars on “Guideline on the cost estimation for construction contractor works (GLCE)” understand the contents. 3-4. Draft circular for authorizing GLCE is submitted to MOC by October 2017 for approval.</p>	<p>1-1. SPQM and the prepared date 1-2. Estimated QM cost and the completed date 1-3. GLQI and the prepared date 2-1. SPSM and the prepared date 2-2. Estimated SM cost and the completed date 2-3. GLSEI and the prepared date 3-1. &amp; 3-2. “Guideline on the cost estimation for direct / indirect construction contractor works” and the submitted date &amp; the minutes of JSC 3-3. Participants list and the questionnaire result 3-4. Draft circular and the submitted date &amp; the minutes of JSC</p>	<p>- C/P bodies work in close cooperation each other.</p>

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of trainings/seminars on "the evaluation method on engineering capacity of const.-contractors" understand the contents. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the questionnaire result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date	
5. (SACE & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on contract alternation" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of participants of trainings/seminars on the above guideline understand the contents.	5-1. & 5-2. "Guideline on contract management" & "Guideline on contract alternation" and the submitted date & the minutes of JSC 5-3. Participants list and the questionnaire result	
Activities		Inputs	
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare SPQM following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 1-4. To prepare Guideline for Quality Inspection (GLQI) for SAs & POs/PMUs	(The Japanese side) 1. Long-term Expert - Chief Advisor 2. Shor-term Experts 1) Team leader / Construction management 2) Deputy team leader /Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation (1) 4) Quality management(1) 5) Quality management (2) 6) Quality management (3) 7) Quality management (4) 8) Quality management (5) 9) Safety management (1) 10) Safety management (2)/Environment management (1) 11) Safety management (3)/Environment management (2) 12) Warranty and insurance / Monitoring and evaluation 13) Construction contractor grading system 14) Training and seminar arrangement (1) 15) Training and seminar arrangement (2) / Public relations / Cost estimation (2)	(The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.
2-1. To review the current practices of SM and EM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SPSM following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 2-4. To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works 2-5. To prepare Guideline for Safety and Environmental Inspection (GLSEI) for SAs & POs/PMUs			
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan 3-2. To formulate "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" 3-3. To formulate "Guideline on the cost estimation for direct construction contractor works (GLCE-2)" 3-4. To prepare draft circular for authorizing "Guideline on the cost estimation for construction contractor works (GLCE)" 3-5. To carry out trainings/seminars on the above GLCE for dissemination 3-6. To compile the training program and the seminar materials on the above GLCE			

Activities	Inputs		Pre-condition
4-1. To identify problems on (i)evaluation of const.-contractors <sup>*4</sup> engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out trainings/seminars of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs	3. C/P Training:10 persons/year x 3times  4. Cost for holding trainings and seminars under the Project		- Jurisdiction of MOC is maintained.
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) 5-5. To carry out trainings/seminars on the above GLCM for dissemination 5-6. To compile the training program and seminars materials on the above GLCM			

- \*1 CM: construction management
- \*2 EM: environment management
- \*3 QM: quality management,
- \*4 SM: safety management,
- \*5 const.-contractor: construction contractor



## **Appendix 2 Project Monitoring Sheet**

**Project Monitoring Sheet version 1 on 30 September 2015**

**Project Monitoring Sheet version 2 on 31 March 2016**

**Project Monitoring Sheet version 3 on 30 September 2016**

**Project Monitoring Sheet version 4 on 31 March 2017**

**Project Monitoring Sheet version 5 on 30 September 2017**



**TO Chief Representative of JICA VIET NAM Office****PROJECT MONITORING SHEET**

Project Title: the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects

Version of the Sheet: Ver. 1 (Term: April 2015 – September 2015)

Name: YAMAUCHI Masafumi

Title: Team Leader / Construction Management

Submission Date: October 13, 2015

**I. Summary****1 Progress****1-1 Progress of Inputs**

- ◆ Input of Japanese short term experts is actually 15.5 man-months. Ratio (actual MM/ planned MM) is 103 %.
- ◆ Coordination between JICA team and Vietnamese counterparts: JICA team informs in advance the detail dispatch plan of short-term experts so that working coordination between Japanese experts and counterparts of CPMUs could be better.
- ◆ Detail input is shown in the Monitoring Sheet II.

**1-2 Progress of Activities**

- ◆ Generally overall progress is as per planned, though some activities are ahead and some are behind.
- ◆ Each activity is shown below and in the Monitoring Sheet II.

[00 Activities for Overall]

- ◆ (1) Work plan has been submitted in July (one month late) due to discussions on the scope of the Project among MOC, JICA and JICA experts.
- ◆ (2) Related regulations are still being issued and those regulations are continuously reviewed. Reviews on those regulations are re-arranged, following to the order in PO and therefore, the reviews do not affect the progress.
- ◆ (3) Objectively verifiable indicators in PDM have been determined by the Project team.
- ◆ (4) Monitoring sheets (Summary and Sheet I & II) have been prepared as of the end of September 2015 by the Project team.
- ◆ (7) Public relations are kept on going, such as introduction of CCQS Project having been prepared and submitted to JICA and MOC.

[0 Activities for Output 1, 2 & 3]

- ◆ Selection of case study projects under JICA loan was completed together with site visits, while selection of case study project under state budget was delayed in 3 months.
- ◆ MOC (C/Ps) were requested to expedite process of selection of case study projects under the state budget. Case study projects under the state budget were selected in August 2015 and site visits were conducted in September 2015.

[1 Activities for Output 1]

- ◆ (1) The current practices of quality management in construction works have been reviewed to identify issues through the case studies.
- ◆ (2) Draft table of contents for the Standard Plan for Quality Management are being drawn up in CPMU meetings with C/Ps and JICA expert.

[2 Activities for Output 2]

- ◆ (1) The current practices of safety management in construction works have been reviewed to

identify issues through the case studies.

- ♦ (2) Draft table of contents for the Standard Plan for Safety Management are being drawn up in CPMU meetings with C/Ps and JICA expert.

#### [3 Activities for Output 3]

- ♦ (1) The current cost estimation system in Viet Nam has been reviewed together with comparison with the system in Japan.
- ♦ (2) Draft table of contents for the cost estimation guideline for indirect construction contractor works are being drawn up.

#### [4 Activities for Output 4]

- ♦ (1) Problems and issues on evaluation of construction contractor engineering capacity, engineer qualification system and construction contractor work performance evaluation system are being identified in CPMU meeting with C/Ps and JICA expert. Related regulations are still being drafted and will be reviewed.
- ♦ (2) Process to commence work performance evaluation system was confirmed in CPMU meeting with C/Ps and JICA expert.
- ♦ (7) Problems and issues on grading system and construction contractor selection mechanism are being identified in CPMU meeting with C/Ps and JICA expert. Related regulations are still being drafted and will be reviewed.
- ♦ (8) Contents on new regulation of PMUs are being confirmed in CPMU meeting with C/Ps and JICA expert. Related regulations are still being drafted and will be reviewed.

#### [5 Activities for Output 5]

- ♦ (1) Problems on contract management in Viet Nam are being identified in CPMU meeting with C/Ps and JICA expert by comparing legal documents in Vietnam and FIDIC Conditions of Contract and through reviews of construction packages.

### **1-3 Achievement of the Project Purpose and Output**

- ♦ As of the end of September 2015, none of the objectively verifiable indicators for project purpose and outputs come to the time to verify.
- ♦ Referring the contents in 1-2 Progress of Activities, the objectively verifiable indicators for project purpose and outputs are expected to achieve.
- ♦ Achievement for project purpose and each output is shown in achievement column of the Monitoring Sheet I.

### **1-4 Changes of Risks and Actions for Mitigation**

- ♦ Nothing has been changed in risks and actions for mitigation.

### **1-5 Progress of Actions undertaken by JICA**

- ♦ There has been no action undertaken by JICA affected to the Project negatively.

### **1-6 Progress of Actions undertaken by Government of Viet Nam**

- ♦ The project document by MOC (C/Ps) is being completed and reviewed to be submitted to the Government of Viet Nam (MPI and MOF) for approval by mid-October 2015.
- ♦ As soon as the Government's approval on the project document, PCU will be officially organized. In meantime, MOC Project Preparation Members fulfill the functions of PCU and the meetings between MOC Project Preparation Members and JICA team are regularly held once in a month to review status of the Project and to discuss issues during implementation of the Project.
- ♦ The CPMU meetings for all outputs have been actively held and the C/Ps have been almost fixed in all CPMUs. C/Ps have not been officially informed, waiting for approval of the project document.

### **1-7 Other Remarkable/Considerable Issues related/affected to the Project (such as other JICA's projects, activities of counterparts, other donors,**



**private sectors, NGOs etc.)**

- ◆ There have been no other issues related and/or affected to the Project so far.

**2 Delay of Work Schedule and/or Problems (if any)****2-1 Detail**

- (1) Difference in scope of the Project: Recognition in the scope of the Project in the record of discussion (RD) signed in January 2015 appeared different between JICA and MOC in Output 3 and 5, details of which shows below.
  - ◆ Output 3: RD stipulates that guidelines on the cost estimation for quality management (QM) and safety management (SM) of construction works shall be formulated, while MOC intends to carry out comprehensive study for overview on the cost estimate system in Viet Nam.
  - ◆ Output 5: RD stipulates that guidelines on contract management and contract alteration in construction works shall be formulated by referring FIDIC (which means in construction contractor works), while MOC intends to carry out study on contract management in all stake holders, including supervision and testing consultants etc.

Careful and respectful discussions between MOC (C/Ps) and JICA team were carried out in May 2015 to fill the gaps of differences and the conclusion is as follows.

- ◆ Output 3: Cost components in direct cost and indirect cost regulated in circular 4 in Viet Nam are broken down and compared with the standard in Japan to find out differences, insufficiency and uncertainty in standard in Viet Nam. Then, cost components other than pure direct cost shall be reviewed in details, by referring those in standard in Japan. With these reviews, cost estimation guideline for indirect construction contractor works shall be formulated.
- ◆ Output 5: Contract documents and contract management in selected construction projects shall be reviewed. Then differences and gaps between these projects shall be summarized by comparing with FIDIC contract (red book as for building and engineering works designed by the employer). Then guidelines on contract management and alterations of construction contractor works shall be formulated.

The work plan was drafted by taking into account the results in the discussions the above among MOC, JICA and JICA experts. Eventually in the Kick-off Meeting (attended by the Vice Minister, JICA Representative and the Project team) in June 2015, contents in the draft work plan were explained and accepted.

The work plan has been officially submitted in July 2015.

- (2) Set-up of PCU: PCU has not been officially organized because the project document by MOC (C/Ps) is being completed and reviewed to be submitted to the Government of Viet Nam (MPI and MOF) for approval.
- (3) Selection of case study project under state budget: Selection of case study project under the state budget has been completed and site visit was implemented in September 2015, which was planned by June 2015.

**2-2 Cause**

- (1) Difference in scope of the Project: Expectation to the Project by MOC is high and MOC recognized the scope of the Project wider, in the field of cost estimation (Output 3) & contract management (Output 5).
- (2) Set-up of PCU: The project document is being completed and reviewed to be submitted to the Government of Viet Nam (MPI and MOF) for approval.
- (3) Selection of case study project under state budget: MOC does not directly manage construction projects and with this reason selection of case study project has taken long time

unexpectedly, though MOC has made active efforts to facilitate the site visits.

### **2-3 Action to be taken**

- (1) Difference in scope of the Project: Discussions between MOC (C/Ps) and JICA team were carried out to fill the gaps of differences in the scope of the Project. Words in PDM have been added, deleted and modified as follows.
  - ♦ Output 3: “guidelines on the cost estimation for QM and SM of construction works“ was changed to “guideline on the cost estimation for indirect construction contractor works”
  - ♦ Output 5: “guidelines on contract management and contract alterations of construction works” was changed to “guidelines on contract management and contract alterations of construction contractor works”

The Project is being implemented in accordance with the agreed scope in the work plan. When the outputs in cost estimation & contract management are about to complete and MOC (C/Ps) still requires to extend the scope in cost estimation & contract management, the scope would be discussed between MOC and JICA.
- (2) Set-up of PCU: In place of PCU, MOC Project Preparation Members fulfill the functions of PCU and the meetings between MOC Project Preparation Members and JICA team are regularly held once in a month to review status of the Project and discuss issues during implementation of the Project. CPMUs are also being implemented smoothly. Therefore actual progress on activities is not affected.
- (3) Selection of case study project under the state budget: Standard plan for quality & safety management and cost estimate are being prepared in parallel to selection of case study project under the state budget. Hence it does not affect to overall progress.

### **2-4 Roles of Responsible Persons/Organization (JICA, Government of Viet Nam etc.)**

- ♦ With the cooperative actions of JICA and MOC, the delays stated above were within manageable range and have been almost resolved as of the end of September 2015.

## **3 Modification of the Project Implementation Plan**

### **3.1 PO**

- ♦ No modification has been made on the plan of operation (PO).

### **3.2 Other Modifications on Detailed Implementation Plan**

- ♦ No modification has been made on the detailed implementation plan.

## **4 Preparation of Government of Viet Nam toward after Completion of the Project**

- ♦ Nothing has been prepared at this stage by the Government of Viet Nam toward after completion of the Project.

## **II. Project Monitoring Sheet I & II as enclosed**

*Interim Report I has been compiled to record the activities in the CCQS Project as at the end of September 2015, which supplements to the Project Monitoring Sheet.*

**Project Monitoring Sheet I (Revision of Project Design Matrix)**

**Project Title:** Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects

**Project Period:** April 2015 to ~ March 2018 (36 months)

**Target Group:** Engineers from CED, SACQI, and CAMA

**Target Area:** Whole Country


**Target Organization:** Construction Economics Department (CED), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)

Version: 1

Dated: 30 September 2015

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<p><b>Overall Goal</b></p> <p>Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.</p> <p>2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project.</p> <p>*Similar organization; Training center for staff of contracting ministry/agency</p> <p>3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics</p> <p>2. Training record of AMC and the similar organizations.</p> <p>3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>	<p>♦ Progress of all activities is almost as per PO.</p> <p>♦ Indicators are expected to achieve.</p>	-
<p><b>Project Purpose</b></p> <p>Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p> <p>*the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic</p> <p>2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders.</p> <p>2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>	<p>♦ Progress of all activities is almost as per PO.</p> <p>♦ Indicators are expected to achieve.</p>	-

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<b>Outputs</b>					
1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.	1-1. QM plan is prepared by December 2015. 1-2. Cost of QM for the case-studied projects is estimated by February 2016.	1-1. QM plan and the prepared date 1-2. Estimated QM cost and the completed date	- C/P bodies work in close cooperation each other.	♦ Progress is of activities in Output 1 is almost as per PO. ♦ Indicators are expected to achieve.	-
2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) of construction works is enhanced.	2-1. SM plan is prepared by December 2015. 2-2. Cost of SM for the case-studied projects is estimated by February 2016.	2-1. SM plan and the prepared date 2-2. Estimated SM cost and the completed date		♦ Progress is of activities in Output 2 is almost as per PO. ♦ Indicators are expected to achieve.	-
3. (CED) Capacity for integrating construction management (CM) into the cost estimation for indirect construction contractor works is enhanced.	3-1. "Guideline (GL) on the cost estimation for indirect construction contractor works is submitted to MOC by March 2016 for approval. 3-2. More than 70 % of participants of training on "Guideline on the cost estimation for indirect construction contractor works" pass the comprehension test. 3-3. Draft circular for authorizing "Guideline on the cost estimation for indirect construction contractor works" is submitted by MOC by May 2016 for approval.	3-1. "Guideline on the cost estimation for indirect construction contractor works" and the submitted date & the minutes of JSC 3-2. Participants list and the test result for each test 3-3. Draft circular and the submitted date & the minutes of JSC		♦ Progress is of activities in Output 3 is almost as per PO. ♦ Indicators are expected to achieve.	-
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of training on "the evaluation method on engineering capacity of const.-contractors" passes the comprehension test. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the test result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Draft regulation on qualification for PMUs and the completed date		♦ Progress is of activities in Output 4 is almost as per PO. ♦ Indicators are expected to achieve.	-
5. (CED & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on alternations of contract" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of training participants of the above two guidelines pass the comprehension test.	5-1. & 5-2. "Guideline on contract management" & "Guidelines on alternations of contract" and the submitted date & the minutes of JSC 5-3. Participants list and the test result		♦ Progress is of activities in Output 5 is almost as per PO. ♦ Indicators are expected to achieve.	-

<b>Activities</b> <b>(Underlined items: either created by MOC or products of the Phase 1)</b>	<b>Inputs</b>		<b>Important Assumptions</b>
1-1. To review the current practices of QM in construction works as case studies based on the <u>Quality Manual</u> , and to identify issues 1-2. To prepare QM plan for the case-studied projects following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan	<b>The Japanese side</b> (The Japanese side) 1. Long-term Expert - Chief Advisor  2. Short-term Experts 1) Team leader / Construction management 2) Deputy team leader / Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation 4) Quality management(I) 5) Quality management (II) 6) Safety management 7) Warranty and insurance 8) Construction contractor grading system 9) Training and seminar arrangement (I) 10) Training and seminar arrangement (II) / Public relations  3. C/P Training: 10 persons/year X 3times  4. Cost for holding trainings and seminars under the Project	<b>The Vietnamese side</b> (The Vietnamese side) 1. Assignment of counterpart personnel  2. Travel allowance and other expenses for participants of the trainings and seminars  3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.
2-1. To review the current practices of SM in construction works as case studies based on the <u>Safety Manual</u> , and to identify issues 2-2. To prepare SM plan for the case-studied projects following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan			
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan. 3-2. To formulate guideline on the cost estimation for indirect construction contractor works 3-3. To prepare draft circular for authorizing "G/L on the cost estimation for indirect construction contractor works" 3-4. To carry out trainings on "G/L on the cost estimation for indirect construction contractor works" for the MOC staff. 3-5. To hold seminars on the above G/L for the dissemination, and compile the training program and the seminar materials	<b>Pre-Conditions</b>	- Jurisdiction of MOC is maintained.	
4-1. To identify problems on (i)evaluation of const.-contractors' engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To carry out trainings of evaluation method on engineering capacity of const.-contractors for the MOC staff 4-5. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-6. To hold seminars on the evaluation method of engineering capacity of const.-contractors 4-7. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism, and compile the training program and seminars materials 4-8. To review function of PMU 4-9. To prepare improvement of regulation on qualification necessary for PMUs	 <b>&lt;Issues and countermeasures&gt;</b>		
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate guideline on contract management of construction contractor works 5-5. To formulate guidelines on alterations of contract of construction contractor works 5-6. To carry out trainings on contract management and alteration of contract of construction contractor works for the MOC staff 5-7. To hold seminars on contract management and alteration of contract of construction contractor works, and compile the training program and seminars materials			

\*1 CM: construction management  
 \*2 QM: quality management,  
 \*3 SM: safety management,  
 \*4 const.-contractor: construction contractor

Project Monitoring Sheet II (Revision of Plan of Operation)

Version 1

Dated 30 September 2015

Project Title:

Inputs		Plan	2015				2016				2017				2018		Remarks	Monitoring		
			Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II		Issue	Solution	
<b>Expert</b>																				
0	Chief Adviser	Plan															no issues	-		
		Actual																		
1	Team Leader / Construction Management	Plan														ditto	-			
		Actual																		
2	Deputy Team Leader / Construction Management / Evaluation of Engineering Capacity	Plan														ditto	-			
		Actual																		
3	Cost Estimation	Plan														ditto	-			
		Actual																		
4	Quality Management (I)	Plan														ditto	-			
		Actual																		
5	Quality Management (II)	Plan														ditto	-			
		Actual																		
6	Safety Management	Plan														ditto	-			
		Actual																		
7	Warranty and Insurance	Plan														ditto	-			
		Actual																		
8	Construction Contactor Grading System	Plan														ditto	-			
		Actual																		
9	Training and Seminar Arrangement (I)	Plan														ditto	-			
		Actual																		
10	Training and Seminar Arrangement (II) / Public Relations	Plan														ditto	-			
		Actual																		
<b>Total M/M of Short-term Experts (1) to (10)</b>		Plan	15.0		20.5			19.0			16.0			15.5	9.0	95.0	almost as per planned	-		
		Actual	15.5												15.5					
Activities		Plan	2015				2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures
Sub-Activities			Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan	GOV		
<b>00 Activities for Overall:</b>																				
(1)	Preparation of Work Plan	Plan																A month late due to discussion on scope	Submission in July, so no more issues	
		Actual																		
(2)	Review on Construction Law and Related Regulations	Plan																Continue, due to regulations kept issuing	Review following the order of PO	
		Actual																		
(3)	Set up for PDM objectively verifiable indicators	Plan																Complete	-	
		Actual																		
(4)	Monitoring and preparation, update and discussion of Monitoring Sheet	Plan																Monitoring sheets have been prepared.	Monitoring sheets to explain in JSC	
		Actual																		
(5)	Holding Joint Steering Committee (JSC)	Plan																-	-	
		Actual																		
(6)	Training in Japan	Plan																-	-	
		Actual																		
(7)	Public relations	Plan																Being carried out	-	
		Actual																		
(8)	Project completion report	Plan																-	-	
		Actual																		

Activities	Sub-Activities	Plan	2015			2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures	
			Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan			GOV
<b>0 Activities for Outputs 1, 2&amp;3 :</b>																				
(1) Selection of case-studied projects		Plan																	JICA PJ complete & State Budget PJ being arranged	Request MOC expedite arrangement
		Actual																		
<b>1 Activities for Output 1: SACQI Capacity for identifying necessary items concerning quality management of construction works is enhanced.</b>																				
(1) To review the current practices of QM in construction works and identify issues		Plan																	Issues being reviewed thru case study projects	Request MOC expedite state budget PJ
		Actual																		
(2) To prepare standard QM plan based on the Quality Manual and review it		Plan																	Draft TOC being discussed in CPMU etc.	-
		Actual																		
(3) To estimate the cost of QM and review it		Plan																	-	-
		Actual																		
(4) To support guideline on the cost estimation for indirect construction contractor works		Plan																	-	-
		Actual																		
<b>2 Activities for Output 2: SACQI Capacity for identifying necessary items concerning safety management of construction works is enhanced.</b>																				
(1) To review the current practices of SM in construction works and identify issues		Plan																	Issues being reviewed thru case study projects	Request MOC expedite state budget PJ
		Actual																		
(2) To prepare standard SM plan based on the Safety Manual and review it		Plan																	Draft TOC being discussed in CPMU etc.	-
		Actual																		
(3) To estimate the cost of SM and review it		Plan																	-	-
		Actual																		
(4) To support guideline on the cost estimation for indirect construction contractor works		Plan																	-	-
		Actual																		
<b>3 Activities for Output 3: CED Capacity for integrating construction management into the cost estimation for indirect construction contractor works is enhanced.</b>																				
(1) To review current cost estimation system in construction works		Plan																	Review almost complete	Cost estimation system in Japan is being explained.
		Actual																		
(2) To formulate guideline on the cost estimation for indirect construction contractor works ("G/L on the cost estimation for indirect construction contractor works) and review it		Plan																	Draft TOC being prepared	
		Actual																		
(3) To prepare draft circulars for authorizing "G/L on the cost estimation for indirect construction contractor works"		Plan																		
		Actual																		
(4) To carry out trainings on "G/L on the cost estimation for indirect construction contractor works" for the MOC staff.		Plan																		
		Actual																		
(5) To hold seminars on the above G/L for dissemination		Plan																		
		Actual																		
(6) To compile the training program and the seminar details on the above G/L		Plan																		
		Actual																		
<b>4 Activities for Output 4: CAMA Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.</b>																				
(1) To identify problems on (i)evaluation of const.-contractors engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system		Plan																	Continue, due to regulations being issued	Review of coming circulars
		Actual																		
(2) To commence the const.-contractor work performance evaluation system		Plan																	Process for commence was confirmed in CPMU	CAMA will make draft regulation and roadmap.
		Actual																		
(3) To develop evaluation method on engineering capacity of const.-contractors and review it		Plan																	-	-
		Actual																		
(4) To prepare draft circular for the evaluation method on engineering capacity of const.-contractors		Plan																	-	-
		Actual																		
(5) To carry out trainings of evaluation method on engineering capacity of const.-contractors for the MOC staff etc.		Plan																	-	-
		Actual																		
(6) To hold seminars on the evaluation method of engineering capacity of const.-contractors for dissemination		Plan																	-	-
		Actual																		
(7) To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism and review it		Plan																	Continue, due to regulations being issued	Review of coming circulars
		Actual																		
(8) To review function of PMU		Plan																	Continue, due to regulations being issued	Review of coming circulars
		Actual																		
(9) To prepare improvement of regulation on qualification necessary for PMUs and review it		Plan																	-	-
		Actual																		

Activities	Sub-Activities	Plan	2015			2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures		
			Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan			GOV	
<b>5 Activities for Output 5: CED &amp; SACQI Capacity for contract management of construction contractor works is enhanced.</b>																					
(1) To identify problems on contract management in construction works		Plan																	Problems being identified in CPMU etc.	-	
		Actual																			
(2) To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works		Plan																	-	-	
		Actual																			
(3) To identify problems on warranty period and insurance in construction works		Plan																	-	-	
		Actual																			
(4) To formulate guidelines on contract management and on alterations of contract and review them		Plan																	-	-	
		Actual																			
(5) To carry out trainings on G/Ls on contract management and alteration of contract for the MOC staff		Plan																	-	-	
		Actual																			
(6) To hold seminars on G/Ls on contract management and alteration of contract for dissemination		Plan																	-	-	
		Actual																			
(7) To compile the training program and seminars details of guidelines on contract management and on alterations of contract		Plan																	-	-	
		Actual																			
<b>Duration / Phasing</b>		Plan																			
		Actual																			
<b>Monitoring Plan</b>		Plan																	Remarks	Issue	Solution
		Actual																			
Monitoring		Plan																			
Joint Steering Committee		Actual																	-	-	
Submission of Monitoring Sheet		Plan																	Monitoring sheets have been prepared.	Monitoring sheets to explain in JSC	
		Actual																			
Reports/Documents		Plan																			
Work Plan		Actual																	A month late due to discussion on scope	Submission in July, so no more issues	
Project Completion Report		Plan																			
		Actual																	-	-	



**TO Chief Representative of JICA VIET NAM Office****PROJECT MONITORING SHEET**

Project Title: the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects

Version of the Sheet: Ver. 2 (Term: April 2015 – March 2016)

Name: YAMAUCHI Masafumi

Title: Team Leader / Construction Management

Submission Date: April 5, 2016

**I. Summary****1 Progress****1-1 Progress of Inputs**

- ♦ Input of Japanese short term experts is actually 34.5 man-months. Ratio (actual MM/ planned MM) is 97 %.
- ♦ Detail input is shown in the Monitoring Sheet II.

**1-2 Progress of Activities**

- ♦ Generally overall progress is as per planned, though some activities are ahead and some are behind.
- ♦ Each activity is shown below and in the Monitoring Sheet II.

[00 Activities for Overall]

- ♦ (1) The work plan was submitted and approved in July 2015.
- ♦ (2) Related regulations are still being issued by the Government of Viet Nam (GOV) and those regulations are continuously reviewed by the Project team (C/Ps and experts). Reviews on those regulations are re-arranged, following to the order in the Plan of Operation and therefore, the reviews do not affect the progress.
- ♦ (3) Objectively verifiable indicators in PDM were determined in August 2015 by the Project team.
- ♦ (4) Monitoring Sheet (Summary and Sheet I & II) Version 2 are being prepared as of the end of March 2016 by the Project team.
- ♦ (5) Joint Steering Committee meeting is being arranged in the middle of April 2016.
- ♦ (6) Thirteen C/Ps visited Japan and completed for training in Japan in November 2015.
- ♦ (7) Public relations are kept on going through web site of MOC, JICA and Construction News (Viet Nam), items of which are the introduction of CCQS Project, JSC held in October, training in Japan in November and the visit to Lai Chau Hydropower Project in December as a case study in the year 2015.

[0 Activities for Output 1, 2 & 3]

- ♦ Selection of two case study projects under JICA loan was completed and site visits and collection of documents were finished by September 2015.
- ♦ Selection of three case study projects under state budget was completed and site visits and collection of documents were finished by the end of 2015.
- ♦ Latter (projects under state budget) in particular took longer time than expected (reason of which is stated in 2-2 (2)), but all were completed successfully.
- ♦ Five case study projects were visited and reviewed by the Project team instead of three projects originally planned in the work plan. This increase made the Project team spend more time for case study projects.

[1 Activities for Output 1]

- ♦ (1) The current practices of quality management in construction works were reviewed and

issues related to quality management were identified through the case studies.

- ◆ (2) The Standard Plan for Quality Management (SPQM) was prepared, discussed and agreed in Component Project Management Unit (CPMU) meetings with C/Ps and JICA expert. SPQM will be presented in the meeting between MOC Project Preparation Members and JICA team and then submitted to MOC with covering letter in April 2016.
- ◆ (3) Cost estimation of QM is being done and cost data for estimation are being provided to Output 3 for the Guideline on the cost estimation for indirect construction contractor works.

[2 Activities for Output 2]

- ◆ (1) The current practices of safety management in construction works were reviewed and issues related to safety management were identified through the case studies.
- ◆ (2) The Standard Plan for Safety Management (SPSM) was prepared, discussed and agreed in CPMU meetings with C/Ps and JICA expert. SPSM will be presented in the meeting between MOC Project Preparation Members and JICA team and then submitted to MOC with covering letter in April 2016.
- ◆ (3) Cost estimation of SM is being done and cost data for estimation is being provided to Output 3 for the Guideline on the cost estimation for indirect construction contractor works.

◆ [3 Activities for Output 3]

- ◆ (1) The review of current cost estimation system in Viet Nam was complete together with comparison with the system in Japan.
- ◆ (2) The guideline (GL) on the cost estimation for indirect construction contractor works was prepared, discussed and will be agreed shortly in CPMU meetings with C/Ps and JICA expert. GL will be presented in the meeting between MOC Project Preparation Members and JICA team and submitted to MOC with covering letter soon.
- ◆ (3) Preparation of draft circular for GL was commenced.

[4 Activities for Output 4]

- ◆ (1) Problems and issues on evaluation of construction contractor engineering capacity, engineer qualification system and construction contractor work performance evaluation system were identified in CPMU meeting with C/Ps and JICA expert. Related regulations are still being drafted and will be reviewed.
- ◆ (2) Process to commence work performance evaluation system was confirmed and road map was prepared in CPMU meeting with C/Ps and JICA expert.
- ◆ (7) Problems and issues on grading system and construction contractor selection mechanism are being identified in CPMU meeting with C/Ps and JICA expert. Related regulations are still being drafted by GOV and will be reviewed by the Project team.
- ◆ (8) Contents on new regulation of PMUs are being confirmed in CPMU meeting with C/Ps and JICA expert. Related regulations are still being drafted and will be reviewed.

[5 Activities for Output 5]

- ◆ (1) Problems on contract management in Viet Nam were identified in CPMU meeting with C/Ps and JICA expert through the case studies and comments received from construction industries in Viet Nam (Vietnam Association of Construction Contractors: VACC, Vietnam Engineering Construction Association: VECAS and Overseas Construction Association of Japan Incorporation: OCAJI).
- ◆ (2) Differences and gaps between FIDIC Conditions of Contract and the Viet Nam Contract were compiled in CPMU meeting with C/Ps and JICA expert.
- ◆ (3) Problems on warranty period and insurance are being discussed and identified in CPMU meeting with C/Ps and JICA expert.
- ◆ (4) The guideline on contract management and alterations is being discussed and compiled in CPMU meeting with C/Ps and JICA expert.

[6 Other Activities]

- ◆ In the First JSC Meeting held in October 2015, there were two requests from MOC to JICA team to have information in construction works in Japan, such as 1) information on ratio of labor cost in construction project, 2) how packages in construction project are determined.

- ♦ In response, JICA team made the following explanation with papers in the meeting between MOC Project Preparation Members and JICA team in January and March 2016;
  - 1) Ratio of Labor Cost in Construction Projects in Japan
  - 2) Construction Package Size in Japan

### **1-3 Achievement of the Project Purpose and Output**

- ♦ As of the end of March 2016, none of the objectively verifiable indicators for project purpose come to the time to verify.
- ♦ First draft of SPQM in Output 1 and SPSM in Output 2 were prepared and submitted in CPMU in December 2015 as per the original plan. They will be presented in the meeting between MOC Project Preparation Members and JICA team in April 2016 and then be submitted. The objectively verifiable indicators shown in 1-1 and 2-1 in the Monitoring Sheet I were confirmed with the means of verification.
- ♦ Cost estimations for QM in Output 1 and SM in Output 2 are being done and cost data for QM and SM are being provided to Output 3. The objectively verifiable indicators shown in 1-2 and 2-2 in the Monitoring Sheet II will be confirmed with the means of verification in due course.
- ♦ The Guideline on the cost estimation for indirect construction contractor works is almost complete and will be submitted soon. Objectively verifiable indicator shown in 3-1 in the Monitoring Sheet I will be confirmed with the means of verification shortly
- ♦ Referring the contents in **1-2 Progress of Activities**, the other objectively verifiable indicators for project purpose and outputs are expected to achieve.
- ♦ Achievement for each output is shown in achievement column of the Monitoring Sheet I.

### **1-4 Changes of Risks and Actions for Mitigation**

- ♦ Nothing has been changed in risks and actions for mitigation.

### **1-5 Progress of Actions undertaken by JICA**

- ♦ JICA continues to provide cooperative actions to the Project.

### **1-6 Progress of Actions undertaken by Government of Viet Nam**

- ♦ The project document by MOC (C/Ps) was submitted to the Government of Viet Nam (Ministry of Planning and Investment: MPI and Ministry of Finance: MOF) for approval in October 2015 and the comments on the document were delivered from MPI and MOF at the end of 2015. Based on MPI and MOF's comments, MOC made revision to the Project Document and the explanation for the Project Document revision was re-submitted to MPI at the beginning of 2016. MOC also sent document to MPI for submission for Prime Minister's approval of the Project list for the basis of approving Project Document.
- ♦ As soon as the Government's approval on the project document, Project Coordination Unit (PCU) will be officially organized. Before the Project Document is approved and the Project is officially implemented in accordance with the regulations of GOV, MOC Project Preparation Members fulfill the functions of PCU and the meetings between MOC Project Preparation Members and JICA team are regularly held once in a month to review status of the Project and to discuss issues during implementation of the Project.
- ♦ The CPMU meetings for all outputs have been actively held and the C/Ps have been almost constant in all CPMU meetings. Name of C/Ps have not been officially informed, waiting for approval of the project document.

### **1-7 Other Remarkable/Considerable Issues related/affected to the Project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

- ♦ There have been no other issues related and/or affected to the Project so far.

## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail**

- (1) Set-up of PCU and Official Nomination of C/Ps: PCU has not been officially organized and C/Ps have not been officially nominated, because the project document by MOC (C/Ps) hasn't been approved due to the fact that procedures for approval as stipulated by GOV are not yet finalized.
- (2) Selection of case study project under state budget: Selection of case study project under the state budget was completed and site visits were implemented in September and December 2015, which was planned by June 2015.

### **2-2 Cause**

- (1) Set-up of PCU and Official Nomination of C/Ps: Procedures for approval of Project Document as stipulated by GOV are not yet finalized.
- (2) Selection of case study projects under state budget: MOC does not directly manage construction projects and with this reason selection of case study projects took long time unexpectedly, though MOC made active efforts to facilitate the site visits.

### **2-3 Action to be taken**

- (1) Set-up of PCU and Official Nomination of C/Ps: Although PCU hasn't been officially set up, MOC Project Preparation Members fulfill the functions of PCU and the meetings between MOC Project Preparation Members and JICA team are regularly held once in a month to review status of the Project and discuss issues during implementation of the Project. The CPMU meetings are also being implemented smoothly with almost constant members. Therefore actual progress on activities is not affected.
- (2) Selection of case study projects under the state budget: Standard plan for quality & safety management and cost estimate are either complete or almost complete as these were prepared and discussed in parallel to selection and site visit of case study projects under the state budget. Hence it did not affect to overall progress.

### **2-4 Roles of Responsible Persons/Organization (JICA, Government of Viet Nam etc.)**

- ♦ With the cooperative actions of JICA and MOC, the delays stated above were within manageable range as of the end of March 2016.

## **3 Modification of the Project Implementation Plan**

### **3.1 PO**

- ♦ No modification has been made on the plan of operation (PO).

### **3.2 Other Modifications on Detailed Implementation Plan**

- ♦ No modification has been made on the detailed implementation plan.

## **4 Preparation of Government of Viet Nam toward after Completion of the Project**

- ♦ The Government of Viet Nam has not prepared anything yet toward completion of the Project.

**II. Project Monitoring Sheet I & II** as enclosed

*Interim Report II has been compiled to record the activities in the CCQS Project as at the end of March 2016, which supplements to the Project Monitoring Sheet.*

**Project Monitoring Sheet I (Revision of Project Design Matrix)**

**Project Title:** Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects

**Project Period:** April 2015 to ~ March 2018 (36 months)

**Target Group:** Engineers from CED, SACQI, and CAMA

**Target Area:** Whole Country


**Target Organization:** Construction Economics Department (CED), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)

Version: 2

Dated: 31 March 2016

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<p><b>Overall Goal</b></p> <p>Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.</p> <p>2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project.</p> <p>*Similar organization; Training center for staff of contracting ministry/agency</p> <p>3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics</p> <p>2. Training record of AMC and the similar organizations.</p> <p>3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>	<p>♦ Progress of all activities is almost as per PO. Hence, goal would be achieved.</p>	-
<p><b>Project Purpose</b></p> <p>Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p> <p>*the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic</p> <p>2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders.</p> <p>2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>	<p>♦ Progress of all activities is almost as per PO. Hence, purpose would be achieved.</p>	-

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<b>Outputs</b>					
1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.	1-1. QM plan is prepared by December 2015. 1-2. Cost of QM for the case-studied projects is estimated by February 2016.	1-1. QM plan and the prepared date 1-2. Estimated QM cost and the completed date	- C/P bodies work in close cooperation each other.	♦ First draft QM plan (Indicator 1-1) was prepared in December 2015. ♦ Cost of QM (Indicator 1-2) is being estimated.	-
2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) of construction works is enhanced.	2-1. SM plan is prepared by December 2015. 2-2. Cost of SM for the case-studied projects is estimated by February 2016.	2-1. SM plan and the prepared date 2-2. Estimated SM cost and the completed date		♦ First draft SM plan (Indicator 2-1) was prepared in December 2015. ♦ Cost of SM (indicator 2-2) is being estimated	-
3. (CED) Capacity for integrating construction management (CM) into the cost estimation for indirect construction contractor works is enhanced.	3-1. "Guideline (GL) on the cost estimation for indirect construction contractor works is submitted to MOC by March 2016 for approval. 3-2. More than 70 % of participants of training on "Guideline on the cost estimation for indirect construction contractor works" pass the comprehension test. 3-3. Draft circular for authorizing "Guideline on the cost estimation for indirect construction contractor works" is submitted by MOC to May 2016 for approval.	3-1. "Guideline on the cost estimation for indirect construction contractor works" and the submitted date & the minutes of JSC 3-2. Participants list and the test result for each test 3-3. Draft circular and the submitted date & the minutes of JSC		♦ GL (Indicator 3-1) will be submitted soon.	-
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of training on "the evaluation method on engineering capacity of const.-contractors" pass the comprehension test. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the test result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date		♦ Progress of activities in Output 4 is almost as per PO. Hence, indicators would be achieved.	-
5. (CED & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on alternations of contract" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of training participants of the above two guidelines pass the comprehension test.	5-1. & 5-2. "Guideline on contract management" & "Guidelines on alternations of contract" and the submitted date & the minutes of JSC 5-3. Participants list and the test result		♦ Progress of activities in Output 5 is almost as per PO. Hence, indicators would be achieved.	-

Activities	Inputs		Important Assumptions
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare QM plan for the case-studied projects following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan	<b>The Japanese side</b>	<b>The Vietnamese side</b>	- C/P personnel remain in the same position.
2-1. To review the current practices of SM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SM plan for the case-studied projects following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan	(The Japanese side) 1. Long-term Expert - Chief Advisor  2. Short-term Experts 1) Team leader / Construction management 2) Deputy team leader / Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation 4) Quality management(I) 5) Quality management (II) 6) Safety management 7) Warranty and insurance 8) Construction contractor grading system 9) Training and seminar arrangement (I) 10) Training and seminar arrangement (II) / Public relations  3. C/P Training: 10 persons/year X 3times  4. Cost for holding trainings and seminars under the Project	(The Vietnamese side) 1. Assignment of counterpart personnel  2. Travel allowance and other expenses for participants of the trainings and seminars  3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan. 3-2. To formulate guideline on the cost estimation for indirect construction contractor works 3-3. To prepare draft circular for authorizing "G/L on the cost estimation for indirect construction contractor works" 3-4. To carry out trainings on "G/L on the cost estimation for indirect construction contractor works" for the MOC staff. 3-5. To hold seminars on the above G/L for the dissemination, and compile the training program and the seminar materials			4-1. To identify problems on (i)evaluation of const.-contractors' engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out trainings of evaluation method on engineering capacity of const.-contractors for the MOC staff 4-6. To hold seminars on the evaluation method of engineering capacity of const.-contractors 4-7. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism, 4-8. To review function of PMU 4-9. To prepare improvement of regulation on qualification necessary for PMUs
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate guidelines on contract management and alterations of contract of construction contractor works 5-5. To carry out trainings on guidelines on contract management and alterations of contract of construction contractor works for the MOC staff 5-6. To hold seminars on guidelines on contract management and alterations of contract of construction contractor works 5-7. To compile the training program and seminar materials on guidelines on contract management and alterations of contract of construction contractor works			- Jurisdiction of MOC is maintained.  <div style="text-align: center;">  </div> <div style="background-color: yellow; text-align: center; padding: 2px;"><b>&lt;Issues and countermeasures&gt;</b></div> No issues as at the end of March 2016.

\*1 CM: construction management  
 \*2 QM: quality management,  
 \*3 SM: safety management,  
 \*4 const.-contractor: construction contractor



Project Monitoring Sheet II (Revision of Plan of Operation)

Version 2

Dated 31 March 2016

Project Title:

Inputs															Monitoring				
															Issue	Solution			
Expert	Plan	2015				2016				2017				2018		Remarks			
	Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II					
0 Chief Adviser	Plan																	no issues	-
	Actual																	ditto	-
1 Team Leader / Construction Management	Plan																	ditto	-
	Actual																	ditto	-
2 Deputy Team Leader / Construction Management / Evaluation of Engineering Capacity	Plan																	ditto	-
	Actual																	ditto	-
3 Cost Estimation	Plan																	ditto	-
	Actual																	ditto	-
4 Quality Management (I)	Plan																	ditto	-
	Actual																	ditto	-
5 Quality Management (II)	Plan																	ditto	-
	Actual																	ditto	-
6 Safety Management	Plan																	ditto	-
	Actual																	ditto	-
7 Warranty and Insurance	Plan																	ditto	-
	Actual																	ditto	-
8 Construction Contactor Grading System	Plan																	ditto	-
	Actual																	ditto	-
9 Training and Seminar Arrangement (I)	Plan																	ditto	-
	Actual																	ditto	-
10 Training and Seminar Arrangement (II) / Public Relations	Plan																	ditto	-
	Actual																	ditto	-
Total M/M of Short-term Experts (1) to (10)	Plan		15.0		20.5		19.0		16.0		15.5		9.0				35.5	almost as per planned	-
	Actual		15.5		19.0											34.5			
Activities															Responsible Organization		Achievements	Issue & Countermeasures	
Sub-Activities															Japan	GOV			
<b>00 Activities for Overall:</b>																			
(1) Preparation of Work Plan	Plan																	Complete a month late.	No negative effects to other activities
	Actual																		
(2) Review on Construction Law and Related Regulations	Plan																	Continue, due to regulations kept issuing.	Review following the order of activities.
	Actual																		
(3) Set up for PDM objectively verifiable indicators	Plan																	Complete.	-
	Actual																		
(4) Monitoring and preparation, update and discussion of Monitoring Sheet	Plan																	Monitoring sheet Ver 2 is being prepared.	-
	Actual																		
(5) Holding Joint Steering Committee (JSC)	Plan																	Second JSC is being arranged in April 2016.	-
	Actual																		
(6) Training in Japan	Plan																	First training in Japan was done & completed.	-
	Actual																		
(7) Public relations	Plan																	Being carried out.	-
	Actual																		
(8) Project completion report	Plan																	-	-
	Actual																		

Activities	Sub-Activities	Plan	2015				2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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(1) To review the current practices of SM in construction works and identify issues		Plan																				Actual																	Issues were identified thru case study	-	(2) To prepare standard SM plan based on the Safety Manual and review it		Plan																				Actual																	First draft Standard SM plan was prepared in Dec. '15.	-	(3) To estimate the cost of SM and review it		Plan																				Actual																	Cost estimation of SM is being done.	-	(4) To support guideline on the cost estimation for indirect construction contractor works		Plan																				Actual																	Cost data are being provided to Output 3	-	<b>3 Activities for Output 3: CED Capacity for integrating construction management into the cost estimation for indirect construction contractor works is enhanced.</b>																				(1) To review current cost estimation system in construction works		Plan																				Actual																	Review was complete	-	(2) To formulate guideline on the cost estimation for indirect construction contractor works ("G/L on the cost estimation for indirect construction contractor works) and review it		Plan																				Actual																	GL will be submitted soon.	-	(3) To prepare draft circulars for authorizing "G/L on the cost estimation for indirect construction contractor works"		Plan																				Actual																	Draft circular was commenced to prepare.	-	(4) To carry out trainings on "G/L on the cost estimation for indirect construction contractor works" for the MOC staff.		Plan																				Actual																	-	-	(5) To hold seminars on the above G/L for dissemination		Plan																				Actual																	-	-	(6) To compile the training program and the seminar details on the above G/L		Plan																				Actual																	-	-	<b>4 Activities for Output 4: CAMA Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.</b>																				(1) To identify problems on (i)evaluation of const.-contractors engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system		Plan																				Actual																	Problems were identified.	-	(2) To commence the const.-contractor work performance evaluation system		Plan																				Actual																	Road map to commence was prepared in CPMU	Implementation of roadmap by CAMA	(3) To develop evaluation method on engineering capacity of const.-contractors and review it		Plan																				Actual																	-	-	(4) To prepare draft circular for the evaluation method on engineering capacity of const.-contractors		Plan																				Actual																	-	-	(5) To carry out trainings of evaluation method on engineering capacity of const.-contractors for the MOC staff etc.		Plan																				Actual																	-	-	(6) To hold seminars on the evaluation method of engineering capacity of const.-contractors for dissemination		Plan																				Actual																	-	-	(7) To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism and review it		Plan																				Actual																	Continue, due to regulations being issued	-	(8) To review function of PMU		Plan																				Actual																	Continue, due to regulations being issued	-	(9) To prepare improvement of regulation on qualification necessary for PMUs and review it		Plan																				Actual																	-	-																																																																																																																																																																																																																																																					
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Activities	Plan	2015				2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures	
		Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan	GOV			
<b>5 Activities for Output 5: CED &amp; SACQI Capacity for contract management of construction contractor works is enhanced.</b>																				
(1) To identify problems on contract management in construction works	Plan																		Problems were identified.	-
	Actual																			
(2) To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works	Plan																		Differences and gaps were compiled.	-
	Actual																			
(3) To identify problems on warranty period and insurance in construction works	Plan																		Problems on warranty etc. are being identified.	-
	Actual																			
(4) To formulate guidelines on contract management and on alterations of contract and review them	Plan																		Guideline is being compiled.	-
	Actual																			
(5) To carry out trainings on G/Ls on contract management and alterations of contract for the MOC staff	Plan																		-	-
	Actual																			
(6) To hold seminars on G/Ls on contract management and alterations of contract for dissemination	Plan																		-	-
	Actual																			
(7) To compile the training program and seminars details of guidelines on contract management and on alterations of contract	Plan																		-	-
	Actual																			
<b>Duration / Phasing</b>		Plan																Progress is as per planned.	-	
		Actual																		
<b>Monitoring Plan</b>		Plan	2015				2016				2017				2018		Remarks	Issue	Solution	
		Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II					
Monitoring																				
Joint Steering Committee		Plan															Second JSC is being arranged in April 2016.	-		
		Actual																		
Submission of Monitoring Sheet		Plan															Monitoring Sheet Ver 2 is being prepared.	-		
		Actual																		
Reports/Documents																				
Work Plan		Plan															Complete a month late.	No negative effects to other activities		
		Actual																		
Project Completion Report		Plan															-	-		
		Actual																		



## TO Chief Representative of JICA VIET NAM Office

### PROJECT MONITORING SHEET

Project Title: the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects

Version of the Sheet: Ver. 3 (Term: April 2015 – September 2016)

Name: YAMAUCHI Masafumi

Title: Team Leader / Construction Management

Submission Date: October 5, 2016

## I. Summary

### 1 Progress

#### 1-1 Progress of Inputs

- ♦ The input of Japanese short term experts is 50.5 man-months (MM). Ratio (actual MM/ planned MM) is 93 %.
- ♦ Detail input is shown in the Monitoring Sheet II.

#### 1-2 Progress of Activities

- ♦ Overall progress is as per planned, though some activities are ahead and some are behind.
- ♦ The progress of each activity is shown below and in the Monitoring Sheet II.

[00 Activities for Overall Project Management]

- ♦ (1) The Project team (C/Ps and experts) explained the work plan in the Kick-off meeting held in June 2015 and all participants (same member of Joint Steering Committee: JSC) in the meeting accepted it. The Project team submitted it to JICA in July 2015.
- ♦ (2) The Government of Viet Nam (GOV) still issues related regulations to the Project activities and the Project team continuously reviews those regulations. The Project team re-arranges the reviews on those regulations, following the order in the Plan of Operation (PO) and therefore, the reviews do not affect the progress of the Project.
- ♦ (3) The Project team finalized all objectively verifiable indicators in the original PDM in August 2015 and revised the PDM (including additional activities for Output 1, 2 and 3 as version 3) in September 2016.
- ♦ (4) The Project team prepares the Monitoring Sheet (Summary and Sheet I & II) Version 3 as of the end of September 2016.
- ♦ (5) The Project team arranges third Joint Steering Committee (JSC) meeting in the middle of October 2016.
- ♦ (6) Thirteen C/Ps visited Japan and completed the training in November 2015. Fifteen C/Ps would visit Japan for the training in November 2016.
- ♦ (7) The Project team carries out activities in Public Relations, publishing the introduction of CCQS Project, first and second JSC meeting held in October 2015 and April 2016, training in Japan in November 2015, the visit to Lai Chau Hydropower Project in December as a case study and Dialogue with Vietnamese construction industry in April 2016 through web site of Ministry of Construction (MOC), JICA and Construction News (Viet Nam).

[0 Activities for Output 1, 2 & 3]

- ♦ The Project team selected two case study projects under JICA loan and completed site visits & collection of documents by September 2015.
- ♦ The Project team also selected three case study projects under state budget and completed site visits & collection of documents by the end of 2015.
- ♦ Latter (projects under state budget) in particular took longer time than expected, as MOC does not directly manage construction projects and with this reason selection of case study

projects took long time unexpectedly. All case studies were completed successfully. The Project team incorporated review results to output documents in Output 1 to 3.

- ♦ The Project team visited and reviewed five case study projects instead of three projects originally planned in the work plan. Therefore, the Project team spent more time for case study projects.

[1 Activities for Output 1]

- ♦ (1) The Project team reviewed the current practices of quality management in construction works and identified the issues related to quality management through the case studies.
- ♦ (2) The Project team prepared the draft Standard Plan for Quality Management (SPQM) in December 2015 and then, discussed / revised and agreed it in Component Project Management Unit (CPMU) meetings. The Project team presented SPQM in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in Viet Nam (Vietnam Association of Construction Contractors: VACC, Vietnam Engineering Construction Association: VECAS and Overseas Construction Association of Japan Incorporation: OCAJI) and discussed with and collected comments for SPQM from them in April 2016. After reviewing all comments, the Project team compiled SPQM and submitted it to MOC in June 2016 with the covering letter.
- ♦ (3) The Project team made cost estimation of Quality Management (QM) in April 2016 and then provided the cost data for estimation to Output 3 for the Guideline on the cost estimation for indirect construction contractor works, after discussed and confirmed in CPMU meeting.

[2 Activities for Output 2]

- ♦ (1) The Project team reviewed the current practices of safety management in construction works and identified the issues related to safety management through the case studies.
- ♦ (2) The Project team prepared the draft Standard Plan for Safety Management (SPSM) in December 2015 and then, discussed / revised and agreed it in Component Project Management Unit (CPMU) meetings. The Project team presented SPSM in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for SPSM from them in April 2016. After reviewing all comments, the Project team compiled SPSM and submitted it to MOC in June 2016 with the covering letter.
- ♦ (3) The Project team made cost estimation of Safety Management (SM) in May 2016 and then provided the cost data for estimation to Output 3 for the Guideline on the cost estimation for indirect construction contractor works, after discussed and confirmed in CPMU meeting.

♦ [3 Activities for Output 3]

- ♦ (1) The Project team completed the review of current cost estimation system in Viet Nam together with comparison with the system in Japan.
- ♦ (2) The Project team prepared the Guideline on the cost estimation for indirect construction contractor works (GLCE), and discussed / revised and agreed it in CPMU meetings in April 2016. The Project team presented GLCE in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for GLCE from them in April 2016. After reviewing all comments, the Project team compiled GLCE and submitted it to MOC in July 2016 with covering letter.
- ♦ (3) The Project team commenced the preparation of draft circular for GLCE.

[4 Activities for Output 4]

- ♦ (1) The Project team identified problems and issues on evaluation of construction contractor engineering capacity, engineer qualification system and construction contractor work

- performance evaluation system in CPMU meetings.
- ♦ (2) The Project team confirmed the process to commence work performance evaluation system and prepared the road map for the process in CPMU meetings. The Project team is selecting a few projects for trial of work performance evaluation.
  - ♦ (3) The Project team developed the evaluation method on engineering capacity of const.-contractor, and discussed / revised and agreed it in CPMU meetings in September 2016. The Project team presented the evaluation method in the meeting between MOC Project Preparation Members and JICA team and would present and submit it in the third JSC meeting in October 2016.
  - ♦ (6) The Project team identifies problems and issues on grading system and construction contractor selection mechanism in CPMU meetings. The Project team would review related regulations, which are still being drafted by GOV.
  - ♦ (7) The Project team confirmed contents on new regulation of Project Management Units (PMUs) in CPMU meetings, after reviewed the related regulations.
  - ♦ (8) The Project team prepared the document on improvement of regulation of PMU qualification in June 2016 and then, discussed / revised and agreed it in Component Project Management Unit (CPMU) meetings. The Project team presented the improvement of regulation of PMU qualification in the meeting between MOC Project Preparation Members and JICA team in August 2016. After reviewing all comments received, the Project team compiled the improvement of regulation of PMU qualification and submitted it to MOC in August 2016 with the covering letter.

[5 Activities for Output 5]

- ♦ (1) The Project team identified problems on contract management in Viet Nam in CPMU meetings through the case studies and comments received from construction industries in Viet Nam (VACC, VECAS and OCAJI).
- ♦ (2) The Project team compiled differences and gaps between FIDIC Conditions of Contract and the Viet Nam Contract in CPMU meetings.
- ♦ (3) The Project team discussed and identified problems on warranty period and insurance in CPMU meetings.
- ♦ (4) The Project team discusses and compiles the guideline on contract management and alteration (GLCM) in CPMU meetings.

### 1-3 Achievement of the Project Purpose and Output

- ♦ As of the end of September 2016, none of the objectively verifiable indicators for Project Purpose come to the time to verify.
- ♦ First draft of SPQM in Output 1 and SPSM in Output 2 were prepared and submitted in CPMU in December 2015 as per the original plan. They were presented in the meeting between MOC Project Preparation Members and JICA team in April 2016 and then submitted in the second JSC meeting. The objectively verifiable indicators shown in 1-1 and 2-1 in the Monitoring Sheet I were confirmed with the means of verification.
- ♦ Cost estimations for QM in Output 1 and SM in Output 2 were done in April and May 2016 and cost data for QM and SM were provided to Output 3. The objectively verifiable indicators shown in 1-2 and 2-2 in the Monitoring Sheet I were confirmed with the means of verification.
- ♦ The Guideline on the cost estimation for indirect construction contractor works (GLCE) was complete and presented in the meeting between MOC Project Preparation Members and JICA team and then submitted in the second JSC meeting in April 2016. The objectively verifiable indicator shown in 3-1 in the Monitoring Sheet I was confirmed with the means of verification.
- ♦ The evaluation method on engineering capacity of const.-contractors was prepared, discussed / revised and agreed in CPMU meetings and presented in the meeting between MOC Project Preparation Members and JICA team in September 2016. It would be submitted in the third JSC meeting in October 2016. The objectively verifiable indicator shown in 4-1 in the

Monitoring Sheet I would be confirmed with the means of verification shortly.

- ♦ Improvement of regulation on qualification for PMUs was prepared and submitted in CPMU in June 2016. It was presented in the meeting between MOC Project Preparation Members and JICA team and then submitted to MOC in August 2016 with covering letter. The objectively verifiable indicator shown in 4-5 in the Monitoring Sheet I was confirmed with the means of verification.
- ♦ Other objectively verifiable indicators for outputs are yet to be the time to verify.
- ♦ Referring the contents in **1-2 Progress of Activities**, the other objectively verifiable indicators for project purpose and outputs are expected to achieve.
- ♦ Achievement for each output is shown in achievement column of the Monitoring Sheet I.

#### **1-4 Changes of Risks and Actions for Mitigation**

- ♦ Nothing has been changed in risks and measures for mitigation.

#### **1-5 Progress of Actions undertaken by JICA**

- ♦ JICA continues to provide cooperative actions to the Project.

#### **1-6 Progress of Actions undertaken by Government of Viet Nam**

- ♦ On October 04, 2016, the Prime Minister has signed Decision No. 1989/QD-TTg on approval for investment policy for the implementation of Technical Cooperation Project which kindly requests the Government of Japan to provide official development assistance. The Decision clearly stated name of the Project: “Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects.” Agency: Ministry of Construction. The non – refundable budget of the Japan Government is 71.010.608.000 VND and the Vietnamese state budget is 10.956.677.160 VND.
- ♦ As soon as the Government’s approval on investment policy for the implementation of the project is received, MOC would submit the Minister to approve the Project Document. The Project Coordination Unit (PCU) will be organized soon.
- ♦ Before the Project Document is approved and the Project is officially implemented in accordance with the regulations of GOV, MOC Project Preparation Members fulfill the functions of PCU and the meetings between MOC Project Preparation Members and JICA team are regularly held once in a month to review status of the Project and to discuss issues during implementation of the Project.
- ♦ The CPMU meetings for all outputs are actively held and the C/Ps are almost constant in all CPMU meetings. Name of C/Ps have not been officially informed, waiting for approval of the Project Document.

#### **1-7 Other Remarkable/Considerable Issues related/affected to the Project (such as other JICA’s projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

- ♦ In the first JSC meeting held in October 2015, there were two requests from MOC to JICA team to have information of construction works in Japan, such as 1) information on ratio of labor cost in construction project, 2) how packages in construction project are determined.
- ♦ In response, JICA team made the following explanation with papers in the meeting between MOC Project Preparation Members and JICA team in January and March 2016;
  - 1) Ratio of Labor Cost in Construction Projects in Japan
  - 2) Construction Package Size in Japan

## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail**

- (1) Set-up of PCU and Official Nomination of C/Ps: As soon as receiving Decision No.1898/QD-TTg dated October 04, 2016 of the Prime Minister on approval for investment policy for the implementation of the project, the Project Preparation Members would submit



the Minister of Construction to approve the Project Document. The PCU will be organized as soon as the Minister approves for the Project Document.

## **2-2 Cause**

- (1) Set-up of PCU and Official Nomination of C/Ps: Procedures for approval of Project Document as stipulated by GOV are not yet finalized.

## **2-3 Action to be taken**

- (1) Set-up of PCU and Official Nomination of C/Ps: Although PCU was not officially set up, MOC Project Preparation Members fulfill the functions of PCU and the meetings between MOC Project Preparation Members and JICA team are regularly held once in a month to review status of the Project and discuss issues during implementation of the Project. The CPMU meetings are also being held smoothly with almost constant members. Therefore actual progress on activities is not affected.

## **2-4 Roles of Responsible Persons/Organization (JICA, Government of Viet Nam etc.)**

- ♦ With the cooperative actions of JICA and MOC, the delays stated above were within manageable range as of the end of September 2016.

## **3 Modification of the Project Implementation Plan**

### **3.1 PO**

- ♦ The original Plan of Operation (PO) is revised and would be presented in the third JSC meeting in October 2016, since the additional activities for Output 1, 2 and 3 are confirmed to be carried out.

### **3.2 Other Modifications on Detailed Implementation Plan**

- ♦ The project implementation flow and the work breakdown structure (WBS) is revised and would be presented in the third JSC meeting in October 2016, since the additional activities for Output 1, 2 and 3 are confirmed to be carried out.

## **4 Preparation of Government of Viet Nam toward after Completion of the Project**

- ♦ The Government of Viet Nam does not prepare anything yet toward completion of the Project.


## **II. Project Monitoring Sheet I & II as enclosed**

*Interim Report III has been compiled to record the activities in the CCQS Project as at the end of September 2016, which supplements to the Project Monitoring Sheet.*

**Project Monitoring Sheet I (Revision of Project Design Matrix)****Project Title: Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects****Project Period: April 2015 to ~ March 2018 (36 months)****Target Group: Engineers from CED, SACQI, and CAMA****Target Area: Whole Country****Target Organization: Construction Economics Department (CED), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)**Version: 3Dated: 30 September 2016*Additional activities in Output 1 to 3 are shown in the column of Activities as well as Objectively Verifiable Indicators & Means of Verification.*

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<b>Overall Goal</b> Construction projects are managed according to the international standards.	1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project. 2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project. *Similar organization; Training center for staff of contracting ministry/agency 3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.	1. Labor and safety statistics 2. Training record of AMC and the similar organizations. 3. Participants list and the test result	- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.	-	-
<b>Project Purpose</b> Regulations for management of public construction projects are improved.	1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project. *the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic 2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.	1. Questionnaire and interview to the stakeholders. 2. Questionnaire and interview to the project owners / employers.	- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.	♦ Progress of all activities is almost as per PO. Hence, purpose would be achieved.	-

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<b>Outputs</b>					
1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.	1-1. Standard Plan for QM (SPQM) is prepared by December 2015. 1-2. Cost of QM for the case-studied projects is estimated by February 2016. 1-3. Guideline for Quality Inspection (GLQI) for State Authorities & PO/PMU is prepared by September 2017.	1-1. SPQM and the prepared date 1-2. Estimated QM cost and the completed date 1-3. GLQI and the prepared date	- C/P bodies work in close cooperation each other.	♦ First draft SPQM (Indicator 1-1) was prepared in December 2015. ♦ Cost of QM (Indicator 1-2) was estimated in April 2015.	-
2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) of construction works is enhanced.	2-1. Standard Plan for SM (SPSM) is prepared by December 2015. 2-2. Cost of SM for the case-studied projects is estimated by February 2016. 2-3. Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & PO/PMU is prepared by September 2017.	2-1. SPSM and the prepared date 2-2. Estimated SM cost and the completed date 2-3. GLSEI and the prepared date		♦ First draft SMSM (Indicator 2-1) was prepared in December 2015. ♦ Cost of SM (indicator 2-2) was estimated in May 2015	-
3. (CED) Capacity for integrating construction management (CM) into the cost estimation for indirect construction contractor works is enhanced.	3-1. "Guideline (GL) on the cost estimation for indirect construction contractor works is submitted to MOC by March 2016 for approval. 3-2. "Guideline (GL) on the cost estimation for direct construction contractor works" is submitted to MOC by September 2017 for approval. 3-3. More than 70 % of participants of training/seminar on "Guideline on the cost estimation for construction contractor works" understand the contents. 3-4. Draft circular for authorizing "Guideline on the cost estimation for construction works" is submitted to MOC by October 2017 for approval.	3-1. & 3-2 "Guideline on the cost estimation for direct / indirect construction contractor works" and the submitted date & the minutes of JSC 3-3. Participants list and the questionnaire result 3-4. Draft circular and the submitted date & the minutes of JSC		♦ GL (Indicator 3-1) was submitted in April 2016. ♦ Other indicators would be achieved, as progress is almost as per PO.	-
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of training/seminar on "the evaluation method on engineering capacity of const.-contractors" understand the contents. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the questionnaire result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date		♦ The evaluation method on engineering capacity of const.-contractors (Indicator 4-1) will be submitted soon. ♦ Improvement of regulation on qualification for PMUs (Indicator 4-5) was prepared in June 2016. ♦ Other indicators would be achieved, as progress is almost as per PO.	-
5. (CED & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on contract alternation" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of training/seminar participants of the above guideline understand the contents.	5-1. & 5-2. "Guideline on contract management" & "Guidelines on contract alternation" and the submitted date & the minutes of JSC 5-3. Participants list and the questionnaire result		♦ All indicators would be achieved, as Progress of activities in Output 5 is almost as per PO.	-

Activities	Inputs		Important Assumptions
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare QM plan for the case-studied projects following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 1-4. To prepare Guideline for Quality Inspection (GLQI) for State Authorities & PO/PMU	<b>The Japanese side</b>	<b>The Vietnamese side</b>	- C/P personnel remain in the same position.
2-1. To review the current practices of SM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SM plan for the case-studied projects following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 2-4. To prepare SPEM following international standards on environment management of construction works 2-5. To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & PO/PMU	(The Japanese side) 1. Long-term Expert - Chief Advisor  2. Short-term Experts 1) Team leader / Construction management 2) Deputy team leader / Construction management / Evaluation of engineering capacity of construction contractors	(The Vietnamese side) 1. Assignment of counterpart personnel  2. Travel allowance and other expenses for participants of the trainings and seminars  3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan. 3-2. To formulate guideline on the cost estimation for indirect construction contractor works 3-3. To formulate "Guideline (GL) on the cost estimation for direct construction contractor works" 3-4. To prepare draft circular for authorizing "G/L on the cost estimation for construction works" 3-5. To carry out training/ seminar on "G/L on the cost estimation for construction contractor works" for dissemination. 3-6. To compile the training program and the seminar materials on the above GL	3) Cost estimation (1) 4) Quality management (1) 5) Quality management (2) 6) Quality management (3) 7) Safety management (1) 8) Safety management (2) / Environment management (1)		<b>Pre-Conditions</b>
4-1. To identify problems on (i)evaluation of const.-contractors' engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out training/ seminar of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism, 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs	9) Safety management (3) / Environment management (2) 10) Warranty and insurance 11) Construction contractor grading system 12) Training and seminar arrangement (1) 13) Training and seminar arrangement (2) / Public relations / Cost estimation (2)		- Jurisdiction of MOC is maintained.
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate guidelines on contract management and alteration of construction contractor works 5-5. To carry out training/ seminar on guidelines on contract management and alteration of construction contractor works for dissemination 5-6. To compile the training program and seminars materials on guidelines on contract management and alteration of construction contractor works	3. C/P Training: 10 persons/year X 3times  4. Cost for holding trainings and seminars under the Project		<div style="text-align: center;">  </div> <div style="background-color: yellow; text-align: center; padding: 2px;"><b>&lt;Issues and countermeasures&gt;</b></div> No issues as at the end of September 2016.

\*1 CM: construction management  
 \*2 QM: quality management,  
 \*3 SM: safety management,  
 \*4 const.-contractor: construction contractor

Project Monitoring Sheet II (Revision of Plan of Operation)

Version 3  
Dated 30 September 2016

Project Title:

Additional activities in Output 1 to 3 are shown in the column of Activities.

Inputs	Plan	2015				2016				2017				2018		Remarks	Monitoring	
		Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II		Issue	Solution
<b>Expert</b>																		
0 Chief Adviser	Plan																no issues	-
	Actual																	
1 Team Leader / Construction Management	Plan															ditto	-	
	Actual																	
2 Deputy Team Leader / Construction Management / Evaluation of Engineering Capacity	Plan															ditto	-	
	Actual																	
3 Cost Estimation (1)	Plan															ditto	-	
	Actual																	
4 Quality Management (1)	Plan															ditto	-	
	Actual																	
5 Quality Management (2)	Plan															ditto	-	
	Actual																	
6 Quality Management (3)	Plan															ditto	-	
	Actual																	
7 Safety Management (1)	Plan															ditto	-	
	Actual																	
8 Safety Management (2) / Environment Management (1)	Plan															ditto	-	
	Actual																	
9 Safety Management (3) / Environment Management (2)	Plan															ditto	-	
	Actual																	
10 Warranty and Insurance	Plan															ditto	-	
	Actual																	
11 Construction Contactor Grading System	Plan															ditto	-	
	Actual																	
12 Training and Seminar Arrangement (1)	Plan															ditto	-	
	Actual																	
13 Public Relations / Training and Seminar Arrangement (2) / Cost Estimation (2)	Plan															ditto	-	
	Actual																	
Total M/M of Short-term Experts (1) to (10)	Plan		15.0		20.5		19.0		16.0		15.5		9.0		54.5			
	Actual		15.5		19.0		16.0							50.5	almost as per planned	-		
<b>Activities</b>	Plan																	
	Actual																	
<b>Sub-Activities</b>																		
<b>00 Activities for Overall Project Management:</b>																		
(1) Preparation of Work Plan	Plan															Complete a month late.	No negative effects to other activities	
	Actual																	
(2) Review on Construction Law and Related Regulations	Plan															Continue, due to regulations kept issuing.	Review following the order of activities.	
	Actual																	
(3) Set up for PDM Objectively Verifiable Indicators	Plan															Complete for original. Additional ones were set.	-	
	Actual																	
(4) Monitoring and preparation, update and discussion of Monitoring Sheet	Plan															Monitoring Sheet Ver 3 is prepared.	-	
	Actual																	
(5) Holding Joint Steering Committee (JSC)	Plan															Third JSC is arranged in October 2016.	-	
	Actual																	
(6) Training in Japan	Plan															Second training in Japan is planned in November.	-	
	Actual																	
(7) Public Relations	Plan															Being carried out.	-	
	Actual																	
(8) Project Completion Report	Plan															-	-	
	Actual																	

Activities	Sub-Activities	Plan	2015				2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures
			Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan	GOV		
<b>0 Activities for Outputs 1, 2&amp;3 :</b>																				
(1) Selection of case-studied projects		Plan																	5 project sites were visited and reviewed.	Originally 3 and finally 5 projects, then longer.
<b>1 Activities for Output 1: SACQI Capacity for identifying necessary items concerning quality management of construction works is enhanced.</b>																				
(1) To review the current practices of QM in construction works and identify issues		Plan																	Issues were identified through case studies.	-
(2) To prepare SPQM following international standards on quality management of construction works and review it		Plan																	First draft SPQM was prepared in Dec '15.	-
(3) To estimate the cost of QM for the case-studied projects based on the management plan and review it		Plan																	Cost estimation of QM was done in Apr. '16.	-
(4) To support guideline on the cost estimation for indirect construction contractor works		Plan																	Cost data was provided to Output 3.	-
(5) To prepare Guideline for Quality Inspection (GLQI) for State Authorities & PO/PMU		Plan																	-	-
<b>2 Activities for Output 2: SACQI Capacity for identifying necessary items concerning safety management of construction works is enhanced.</b>																				
(1) To review the current practices of SM in construction works and identify issues		Plan																	Issues were identified through case studies.	-
(2) To prepare SPSM following international standards on safety management of construction works and review it		Plan																	First draft SPSM was prepared in Dec. '15.	-
(3) To estimate the cost of SM for the case-studied projects based on the management plan and review it		Plan																	Cost estimation of SM was done in May '15.	-
(4) To support guideline on the cost estimation for indirect construction contractor works		Plan																	Cost data was provided to Output 3	-
(5) To prepare SPEM following international standards on environment management of construction works		Plan																	-	-
(6) To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & PO/PMU		Plan																	-	-
<b>3 Activities for Output 3: CED Capacity for integrating construction management into the cost estimation for indirect construction contractor works is enhanced.</b>																				
(1) To review methodology and consistency of current cost estimation system in construction works in accordance with Construction Law 2014 in comparing with the one of Japan		Plan																	Review was completed	-
(2) To formulate "Guideline (GL) on the cost estimation for indirect construction contractor works" and review it		Plan																	Draft GLCE was submitted in Apr. '16.	-
(3) To formulate "Guideline (GL) on the cost estimation for direct construction contractor works" and review it		Plan																	-	-
(4) To prepare draft circulars for authorizing "G/L on the cost estimation for construction works"		Plan																	Draft circular is commenced to prepare.	-
(5) To carry out training/seminar on "GL on the cost estimation for construction contractor works" for dissemination		Plan																	-	-
(6) To compile the training program and the seminar materials on the above G/L		Plan																	-	-

Activities	Plan	2015				2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures	
		Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan	GOV			
<b>4 Activities for Output 4: CAMA Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.</b>																				
(1) To identify problems on (i)evaluation of const.-contractors engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system	Plan																	Problems were identified.	-	
	Actual																			
(2) To commence the const.-contractor work performance evaluation system	Plan																	Road map to commence was prepared in CPMU	Implementation of roadmap by CAMA	
	Actual																			
(3) To develop evaluation method on engineering capacity of const.-contractors and review it	Plan																	Evaluation method will be submitted soon.	-	
	Actual																			
(4) To prepare draft circular for the evaluation method on engineering capacity of const.-contractors	Plan																	Draft circular is being prepared.	-	
	Actual																			
(5) To carry out trainings/seminar of evaluation method on engineering capacity of const.-contractors for dissemination	Plan																	-	-	
	Actual																			
(6) To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism and review it	Plan																	-	-	
	Actual																			
(7) To review function of PMU	Plan																	Review was completed	-	
	Actual																			
(8) To prepare improvement of regulation on qualification necessary for PMUs and review it	Plan																	Improvement of regulation on qualification for PMUs was prepared in Jun. '16	-	
	Actual																			
<b>5 Activities for Output 5: CED &amp; SACQI Capacity for contract management of construction contractor works is enhanced.</b>																				
(1) To identify problems on contract management in construction works	Plan																	Problems were identified.	-	
	Actual																			
(2) To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works	Plan																	Differences and gaps were listed up.	-	
	Actual																			
(3) To identify problems on warranty period and insurance in construction works	Plan																	Problems on warranty etc. was identified.	-	
	Actual																			
(4) To formulate guideline on contract management and alteration of construction contractor works and review them	Plan																	Guideline is being compiled.	-	
	Actual																			
(5) To carry out trainings/seminar on G/L on contract management and alteration of construction contractor works for dissemination	Plan																	-	-	
	Actual																			
(6) To compile the training program and seminars details of guideline on contract management and alteration of construction contractor works	Plan																	-	-	
	Actual																			
<b>Duration / Phasing</b>	Plan																	Progress is as per planned.	-	
	Actual																			
<b>Monitoring Plan</b>	Plan																	Remarks	Issue	Solution
	Actual																			
Monitoring																				
Joint Steering Committee	Plan																	Third JSC is arranged in Oct. '16.	-	
	Actual																			
Submission of Monitoring Sheet	Plan																	Monitoring Sheet Ver 3 is prepared.	-	
	Actual																			
Reports/Documents																				
Work Plan	Plan																	Complete a month late.	No negative effects to other activities	
	Actual																			
Project Completion Report	Plan																	-	-	
	Actual																			





**TO Chief Representative of JICA VIET NAM Office****PROJECT MONITORING SHEET**

Project Title: the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects

Version of the Sheet: Ver. 4 (Term: April 2015 – March 2017)

Name: YAMAUCHI Masafumi

Title: Team Leader / Construction Management

Submission Date: March 31, 2017

**I. Summary****1 Progress****1-1 Progress of Inputs**

- ♦ The input of Japanese short term experts is 74.8 man-months (MM). Ratio (actual MM/ planned MM) is 97 %.
- ♦ Detail input is shown in the Monitoring Sheet II.

**1-2 Progress of Activities**

- ♦ Overall progress is as per planned, though some activities are ahead and some are behind.
- ♦ The progress of each activity is shown below and in the Monitoring Sheet II.

[00 Activities for Overall Project Management]

- ♦ (1) The Project team (Counterparts: C/Ps and experts) explained the Work Plan in the Kick-off meeting held in June 2015 and all participants (same member of Joint Steering Committee: JSC) in the meeting accepted it. The Project team submitted it to Japan International Cooperation Agency (JICA) in July 2015.
- ♦ (2) The Government of Viet Nam (GOV) still issues related regulations to the Project activities and the Project team continuously reviews those regulations. The Project team re-arranges the reviews on those regulations, following the order in the Plan of Operation (PO) and therefore, the reviews do not affect the progress of the Project.
- ♦ (3) The Project team finalized all objectively verifiable indicators in the original Project Design Matrix (PDM) in August 2015. The Project team revised the PDM by including additional activities for Output 1, 2 and 3 as version 3 and finalized the objectively verifiable indicators for additional activities in September 2016.
- ♦ (4) The Project team prepared the Monitoring Sheet (Summary and Sheet I & II) Version 4 as of the end of March 2017 and will submit it to JICA in April 2017.
- ♦ (5) The Project team arranged the fourth Joint Steering Committee (JSC) meeting in April 2017. The Project team will explain the progress of the Project.
- ♦ (6) Thirteen C/Ps visited Japan and completed the training in November 2015. Fifteen C/Ps visited Japan and completed the training in November 2016.
- ♦ (7) The Project team carries out activities in Public Relations, publishing the introduction of the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project), three times of the JSC meeting held in October 2015, April 2016 and October 2016, training in Japan in November 2015 and 2016, dialogues with Vietnamese construction industries in April 2016 and March 2017, and Training Workshops held at Hanoi, Da Nang and HCMC in November and December 2016 through web site of the Ministry of Construction (MOC), JICA and construction related medias in Viet Nam as well as CCQS Project web site.

## [0 Activities for Output 1, 2 &amp; 3]

- ♦ The Project team selected two case study projects under JICA loan and completed site visits and collection of documents by September 2015.
- ♦ The Project team also selected three case study projects under state budget and completed site visits and collection of documents by the end of 2015.
- ♦ Latter (projects under state budget) in particular took longer time than expected, as MOC does not directly manage construction projects and with this reason selection of case study projects took long time unexpectedly.
- ♦ As recommended and requested in the third JSC meeting, the Project team visited Song Hau Thermal Power Plant Project in Hau Giang Province in December 2016. The Project team discussed in regard to construction management with PMU and the contractor, and collected the documents from the project.
- ♦ All case studies were completed successfully. The Project team incorporated the review results to output documents in each Output.
- ♦ The Project team visited and reviewed six case study projects instead of three projects originally planned in the Work Plan. Therefore, the Project team spent more time for case study projects.

## [1 Activities for Output 1]

- ♦ (1) The Project team reviewed the current practices of quality management in construction works and identified the issues related to quality management through the case studies.
- ♦ (2) The Project team prepared the draft Standard Plan for Quality Management (SPQM) in December 2015 and then, discussed / revised and agreed it in the Component Project Management Unit (CPMU) meetings. The Project team presented SPQM in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in Viet Nam (Vietnam Association of Construction Contractors: VACC, Vietnam Engineering Construction Association: VECAS and the Overseas Construction Association of Japan Inc.: OCAJI) and discussed with and collected comments for SPQM from them in April 2016. After reviewing all comments, the Project team compiled SPQM and submitted it to MOC in June 2016 with the covering letter.
- ♦ (3) The Project team made cost estimation of Quality Management (QM) in April 2016 and then provided the cost data to Output 3 for the Guideline on the Cost Estimation for Indirect Construction Contractor Works, after discussed and confirmed in CPMU meeting of Output 1. Some discussions were carried out with C/Ps of Output 3 and differences in cost for quality management were found. The Project team will review it further after receiving data from C/Ps.
- ♦ (4) The Project team commenced to discuss with C/Ps in regard to quality inspection for state authorities and Project Owner (PO) / Project Management Unit (PMU) in order to prepare the Guideline for Quality Inspection (GLQI).
- ♦ (5) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016. C/P and the expert of Output 1 made presentations and discussions with the participants.

## [2 Activities for Output 2]

- ♦ (1) The Project team reviewed the current practices of safety management in construction works and identified the issues related to safety management through the case studies. In addition, the Project team reviewed the current practices of environment management in construction works as additional activities and identified the issues related to environment management through the case studies.
- ♦ (2) The Project team prepared the draft Standard Plan for Safety Management (SPSM) in December 2015 and then, discussed / revised and agreed it in CPMU meetings. The Project team presented SPSM in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for SPSM from them in April 2016.

After reviewing all comments, the Project team compiled SPSM and submitted it to MOC in June 2016 with the covering letter.

- ♦ (3) The Project team made cost estimation of Safety Management (SM) in May 2016 and then provided the cost data to Output 3 for the Guideline on the Cost Estimation for Indirect Construction Contractor Works, after discussed and confirmed in CPMU meeting of Output 2.
- ♦ (4) The Project team commenced to discuss with C/Ps in regard to environment management in order to prepare the Standard Plan for Environment Management (SPEM). It was agreed in CPMU meeting that SPSM and SPEM will be combined to the Standard Plan for Safety and Environment Management (SPSEM).
- ♦ (5) The Project team also commenced to discuss with C/Ps in regard to safety and environmental inspection for state authorities and PO/PMU in order to prepare the Guideline for Safety and Environmental Inspection (GLSEI).
- ♦ (6) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016. C/P and the Chief advisor made presentations and discussions with the participants.

#### [3 Activities for Output 3]

- ♦ (1) The Project team completed the review of current cost estimation system in Viet Nam together with comparison with the system in Japan.
- ♦ (2) The Project team formulated the Guideline on the Cost Estimation for Indirect Construction Contractor Works (GLCE-1), and discussed / revised and agreed it in CPMU meetings in April 2016. The Project team presented GLCE-1 in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for GLCE-1 from them in April 2016. After reviewing all comments, the Project team compiled GLCE-1 and submitted it to MOC in July 2016 with the covering letter.
- ♦ (3) The Project team commenced to discuss with C/Ps in regard to the cost estimation for direct construction contractor works in order to formulate the Guideline on the Cost Estimation for Direct Construction Contractor works (GLCE-2).
- ♦ (4) The Project team commenced the preparation of draft circular for the Guideline on the Cost Estimation (GLCE).
- ♦ (5) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016. C/P and the expert of Output 3 made presentations and discussions with the participants.

#### [4 Activities for Output 4]

- ♦ (1) The Project team identified problems and issues on evaluation of construction contractor engineering capacity, engineer qualification system and construction contractor work performance evaluation system in CPMU meetings.
- ♦ (2) The Project team confirmed the process to commence work performance evaluation system and prepared the road map for the process in CPMU meetings. The Project team made two trials of work performance evaluation.
- ♦ (3) The Project team developed the evaluation method on engineering capacity of const.-contractor, and discussed / revised and agreed it in CPMU meetings in September 2016. The Project team presented the evaluation method in the meeting between MOC Project Preparation Members and JICA team in September 2016 and presented and submitted it in the third JSC meeting in October 2016. The Project team then submitted it to MOC in October 2016 with the covering letter. The Project team arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for the evaluation method on engineering capacity from them in March 2017.
- ♦ (4) In parallel with the development of the evaluation method on engineering capacity, the Project team prepared the draft circular for the evaluation method on engineering capacity of const.-contractor and discussed and agreed it in CPMU meeting in October 2016. The

Project team presented it in the third JSC meeting in October 2016 and submitted it to MOC together with the evaluation method on engineering capacity with the covering letter.

- ♦ (5) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016. C/P and the expert of Output 4 made presentations and discussions with the participants.
- ♦ (6) The Project team identified problems and issues on the grading system in CPMU meetings. The Project team included the construction contractor grading system in the evaluation method on engineering capacity and submitted it to MOC with the covering letter in October 2016 through the same process stated in (3) above.  
The Project team identified problems and issues on construction contractor selection mechanism in CPMU meetings. The Project team discussed and prepared the construction contractor selection mechanism in CPMU meetings in March 2017. The Project team also arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for the selection mechanism from them in March 2017. After reviewing all comments, the Project team will compile the selection mechanism and present it in the fourth JSC meeting in April 2017.
- ♦ (7) The Project team confirmed contents on new regulation of Project Management Units (PMUs) in CPMU meetings, after reviewing the related regulations.
- ♦ (8) The Project team prepared the document on improvement of regulation of PMU qualification and then, discussed / revised and agreed it in CPMU meetings in June 2016. The Project team presented the improvement of regulation of PMU qualification in the meeting between MOC Project Preparation Members and JICA team in August 2016. After reviewing all comments received, the Project team compiled the improvement of regulation of PMU qualification and submitted it to MOC in August 2016 with the covering letter.

#### [5 Activities for Output 5]

- ♦ (1) The Project team identified problems on contract management in Viet Nam in CPMU meetings through the case studies and comments received from construction industries in Viet Nam (VACC, VECAS and OCAJI).
- ♦ (2) The Project team compiled differences and gaps between The International Federation of Consulting Engineer (FIDIC) Conditions of Contract and the Viet Nam Contract in CPMU meetings.
- ♦ (3) The Project team discussed and identified problems on warranty period and insurance in CPMU meetings.
- ♦ (4) The Project team discussed and compiled the draft Guideline on Contract Management and Contract Alteration (GLCM) in CPMU meetings in October 2016. The Project team reviewed / revised GLCM and discussed for finalization in CPMU meeting in February 2017. The Project team then arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for the draft GLCM from them in March 2017. The Project team also presented the draft GLCM in PCU meeting in March 2017. After reviewing all comments, the Project team compiled GLCM and submitted it to MOC in March 2017 with the covering letter. The Project team will present GLCM in the fourth JSC meeting in April 2017.
- ♦ (5) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016. C/P and the expert of Output 5 made presentations and discussions with the participants.

### 1-3 Achievement of the Project Purpose and Output

- ♦ As of the end of March 2017, none of the objectively verifiable indicators for Project Purpose come to the time to verify.
- ♦ (1-1 & 2-1) Draft of SPQM in Output 1 and SPSM in Output 2 were prepared and submitted in CPMU in December 2015 as per the original plan. They were presented in the meeting between MOC Project Preparation Members and JICA team and then submitted in the second JSC meeting in April 2016. The objectively verifiable indicators shown in 1-1 and

- 2-1 in the Monitoring Sheet I were confirmed with the means of verification.
- ♦ (1-2 & 2-2) Costs for Quality Management (QM) in Output 1 and Safety Management (SM) in Output 2 were estimated in April and May 2016 and cost data for QM and SM were provided to Output 3. The objectively verifiable indicators shown in 1-2 and 2-2 in the Monitoring Sheet I were confirmed with the means of verification.
  - ♦ (3-1) The Guideline on the Cost Estimation for Indirect Construction Contractor Works (GLCE-1) was complete and presented in the meeting between MOC Project Preparation Members and JICA team and then submitted in the second JSC meeting in April 2016. The objectively verifiable indicator shown in 3-1 in the Monitoring Sheet I was confirmed with the means of verification.
  - ♦ (4-1) The evaluation method on engineering capacity of const.-contractors was prepared, discussed / revised and agreed in CPMU meetings and presented in the meeting between MOC Project Preparation Members and JICA team in September 2016. It was submitted in the third JSC meeting in October 2016. The objectively verifiable indicator shown in 4-1 in the Monitoring Sheet I was confirmed with the means of verification.
  - ♦ (4-3) The draft circular for authorizing the evaluation method on engineering capacity was prepared, discussed and agreed in CPMU meetings and submitted in the third JSC meeting in October 2016. The objectively verifiable indicator shown in 4-3 in the Sheet I was confirmed with the means of verification.
  - ♦ (4-4) The construction contractor grading system was prepared, discussed / revised and agreed in CPMU meetings within the document for the evaluation method on engineering capacity stated in (4-1) above and presented in the meeting between MOC Project Preparation Members and JICA team in September 2016. It was submitted in the third JSC meeting in October 2016. The objectively verifiable indicator shown in 4-4 in the Sheet I was confirmed with the means of verification.
  - ♦ (4-5) Improvement of regulation on qualification for PMUs was prepared and submitted in CPMU in June 2016. It was presented in the meeting between MOC Project Preparation Members and JICA team and then submitted to MOC in August 2016 with the covering letter. The objectively verifiable indicator shown in 4-5 in the Monitoring Sheet I was confirmed with the means of verification.
  - ♦ (5-1 & 5-2) Guideline on Contract Management and Contract Alteration (GLCM) was prepared, discussed / revised and agreed in CPMU meetings in February 2017 and presented in PCU meeting in March 2017. It was submitted to MOC in March 2017 with the covering letter and will be presented in the fourth JSC meeting in April 2017. The objectively verifiable indicators shown in 5-1 & 5-2 in the Monitoring Sheet I are confirmed with the means of verification shortly.
  - ♦ Other objectively verifiable indicators for outputs are yet to be the time to verify.
  - ♦ Referring the contents in **1-2 Progress of Activities**, the other objectively verifiable indicators for project purpose and outputs are expected to achieve.
  - ♦ Achievement for each output is shown in achievement column of the Monitoring Sheet I.

#### **1-4 Changes of Risks and Actions for Mitigation**

- ♦ Nothing has been changed in risks and measures for mitigation.

#### **1-5 Progress of Actions undertaken by JICA**

- ♦ JICA continues to provide cooperative actions to the Project.

#### **1-6 Progress of Actions undertaken by Government of Viet Nam**

- ♦ On October 4, 2016, the Prime Minister signed Decision No. 1989/QĐ-TTg on approval for investment policy for the implementation of Technical Cooperation Project. The Decision clearly stated name of the Project: “Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects” and Agency: Ministry of Construction. The grant budget of the Government of Japan is 71,010,608,000 VND and the Vietnamese state budget is 10,956,677,160 VND.

- ♦ Based on the Government's approval on the investment policy for the implementation of the Project, MOC Minister approved the Project Document in Decision No. 1128/QD-BXD dated October 28, 2016.
- ♦ Following the approval of the Project Document, the Minister of MOC also issued the Decision No. 1131a/QD-BXD dated October 31, 2016 to establish the Project Coordination Unit (PCU) with 12 members, headed by Dr. Pham Khanh Toan, Director General of International Cooperation Department.
- ♦ Directors of CPMUs were appointed by MOC Minister in Decision No. 1132a/QD-BXD dated October 31, 2016. Upon the approval of the MOC Minister of CPMU Directors, the Directors issued Decisions to establish their CPMUs accordingly. Names of C/Ps were officially informed by PCU and CPMUs through sending copies of the above mentioned Decisions to the JICA team.
- ♦ First official PCU meeting was held on January 13, 2017.

### **1-7 Other Remarkable/Considerable Issues related/affected to the Project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

- ♦ In the first JSC meeting held in October 2015, there were two requests from MOC to JICA team to have information of construction works in Japan, such as 1) information on ratio of labor cost in construction project, 2) how packages in construction project are determined.
- ♦ In response, JICA team made the following explanation with the papers in the meeting between MOC Project Preparation Members and JICA team in January and March 2016;
  - 1) Ratio of Labor Cost in Construction Projects in Japan
  - 2) Construction Package Size in Japan

## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail**

- (1) Set-up of PCU and Official Nomination of C/Ps: As soon as receiving Decision No.1898/QD-TTg dated October 4, 2016 of the Prime Minister on approval for investment policy for the implementation of the Project, the Project Preparation Members submitted the Minister of Construction to approve the Project Document, which was officially approved on October 28, 2016. Following the approval of the Project Document, PCU and CPMUs were established and member of PCU and CPMUs were nominated in October to December 2016.

### **2-2 Cause**

- (1) Set-up of PCU and Official Nomination of C/Ps: Procedures for approval of Project Document as stipulated by GOV took more time than expected.

### **2-3 Action to be taken**

- (1) Set-up of PCU and Official Nomination of C/Ps: Although PCU was not officially set up, MOC Project Preparation Members fulfilled the functions of PCU and the meetings between MOC Project Preparation Members and JICA team were held once in a month to review status of the Project and discuss issues during implementation of the Project. The CPMU meetings were also held smoothly with almost constant members. Therefore actual progress on activities was not affected.

### **2-4 Roles of Responsible Persons/Organization (JICA, Government of Viet Nam etc.)**

- ♦ With the cooperative actions of JICA and MOC, the delays stated above were within manageable range and those were resolved entirely.

### **3 Modification of the Project Implementation Plan**

#### **3.1 PO**

- ♦ The original Plan of Operation (PO) was revised, presented and accepted in the third JSC meeting in October 2016, since the additional activities for Output 1, 2 and 3 were confirmed to be carried out.

#### **3.2 Other Modifications on Detailed Implementation Plan**

- ♦ The project implementation flow and the work breakdown structure (WBS) was revised, presented and approved in the third JSC meeting in October 2016, since the additional activities for Output 1, 2 and 3 were confirmed to be carried out.

### **4 Preparation of Government of Viet Nam toward after Completion of the Project**

- ♦ The Government of Viet Nam does not prepare anything yet toward completion of the Project.

## **II. Project Monitoring Sheet I & II as enclosed**

*Interim Report IV has been compiled to record the activities in the CCQS Project as at the end of March 2017, which supplements to the Project Monitoring Sheet.*

## Project Monitoring Sheet I

**Project Title:** Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects

**Project Period:** April 2015 to ~ March 2018 (36 months)

**Target Group:** Engineers from CED, SACQI, and CAMA

**Target Area:** Whole Country

**Target Organization:** Construction Economics Department (CED), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)


Version: 4

Dated: 31 March 2017

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<p><b>Overall Goal</b></p> <p>Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.</p> <p>2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project.</p> <p>*Similar organization; Training center for staff of contracting ministry/agency</p> <p>3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics</p> <p>2. Training record of AMC and the similar organizations.</p> <p>3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>	-	-
<p><b>Project Purpose</b></p> <p>Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p> <p>*the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic</p> <p>2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders.</p> <p>2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>	<p>♦ Progress of all activities is almost as per PO. Hence, project purpose will be achieved.</p>	-



Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<b>Outputs</b>					
1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.	1-1. Standard Plan for QM (SPQM) is prepared by December 2015. 1-2. Cost of QM for the case-studied projects is estimated by February 2016. 1-3. Guideline for Quality Inspection (GLQI) for State Authorities & PO/PMU is prepared by September 2017.	1-1. SPQM and the prepared date 1-2. Estimated QM cost and the completed date 1-3. GLQI and the prepared date	- C/P bodies work in close cooperation each other.	<ul style="list-style-type: none"> <li>♦ (1-1) Draft SPQM was prepared in Dec. 2015.</li> <li>♦ (1-2) Cost of QM was estimated in Apr. 2016.</li> <li>♦ Other will be achieved, as progress is as per PO.</li> </ul>	-
2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) of construction works is enhanced.	2-1. Standard Plan for SM (SPSM) is prepared by December 2015. 2-2. Cost of SM for the case-studied projects is estimated by February 2016. 2-3. Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & PO/PMU is prepared by September 2017.	2-1. SPSM and the prepared date 2-2. Estimated SM cost and the completed date 2-3. GLSEI and the prepared date		<ul style="list-style-type: none"> <li>♦ (2-1) Draft SPSM was prepared in Dec. 2015.</li> <li>♦ (2-2) Cost of SM was estimated in May 2016.</li> <li>♦ Other will be achieved, as progress is as per PO.</li> </ul>	-
3. (CED) Capacity for integrating construction management (CM) into the cost estimation for indirect construction contractor works is enhanced.	3-1. "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" is submitted to MOC by March 2016 for approval. 3-2. "Guideline on the cost estimation for direct construction contractor works (GLCE-2)" is submitted to MOC by September 2017 for approval. 3-3. More than 70 % of participants of training/seminar on "Guideline on the cost estimation for construction contractor works (GLCE)" understand the contents. 3-4. Draft circular for authorizing "Guideline on the cost estimation for construction works (GLCE)" is submitted to MOC by October 2017 for approval.	3-1. & 3-2 "Guideline on the cost estimation for direct / indirect construction contractor works" and the submitted date & the minutes of JSC 3-3. Participants list and the questionnaire result 3-4. Draft circular and the submitted date & the minutes of JSC		<ul style="list-style-type: none"> <li>♦ (3-1) GLCE-1 was submitted in Apr. 2016.</li> <li>♦ Others will be achieved, as progress is as per PO.</li> </ul>	-
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of training/seminar on "the evaluation method on engineering capacity of const.-contractors" understand the contents. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the questionnaire result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date		<ul style="list-style-type: none"> <li>♦ (4-1 &amp; 4-4) The evaluation method on engineering capacity &amp; grading system were submitted in Oct. 2016..</li> <li>♦ (4-3) Draft circular was submitted in Oct. 2016.</li> <li>♦ (4-5) Improvement of regulation on qualification for PMUs was prepared in Jun. 2016.</li> <li>♦ Other will be achieved, as progress is as per PO.</li> </ul>	-
5. (CED & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on contract alternation" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of training/seminar participants of the above guideline understand the contents.	5-1. & 5-2. "Guideline on contract management" & "Guidelines on contract alternation" and the submitted date & the minutes of JSC 5-3. Participants list and the questionnaire result		<ul style="list-style-type: none"> <li>♦ (5-1&amp;5-2) GLCM was submitted in Mar. 2017.</li> <li>♦ Other will be achieved, as progress is as per PO.</li> </ul>	-

Activities	Inputs		Important Assumptions
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare SPQM following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 1-4. To prepare Guideline for Quality Inspection (GLQI) for State Authorities & PO/PMU	<b>The Japanese side</b> (The Japanese side) 1. Long-term Expert - Chief Advisor 2. Short-term Experts 1) Team leader / Construction management 2) Deputy team leader / Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation (1) 4) Quality management (1) 5) Quality management (2) 6) Quality management (3) 7) Quality management (4) 8) Quality management (5) 9) Safety management (1) 10) Safety management (2) / Environment management (1) 11) Safety management (3) / Environment management (2) 12) Warranty and insurance 13) Construction contractor grading system 14) Training and seminar arrangement (1) 15) Training and seminar arrangement (2) / Public relations / Cost estimation (2) 3. C/P Training: 10 persons/year X 3times 4. Cost for holding trainings and seminars under the Project	<b>The Vietnamese side</b> (The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.
2-1. To review the current practices of SM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SPSM following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 2-4. To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works 2-5. To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & PO/PMU			
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan. 3-2. To formulate "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" 3-3. To formulate "Guideline on the cost estimation for direct construction contractor works (GLCE-2)" 3-4. To prepare draft circular for authorizing "Guideline on the cost estimation for construction works (GLCE)" 3-5. To carry out training/seminar on GLCE for dissemination. 3-6. To compile the training program and the seminar materials on the above GLCE			
4-1. To identify problems on (i)evaluation of const.-contractors' engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out training/ seminar of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism, 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs			
5-1. To identify problems on contract management in construction contractor works 5-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 5-3. To identify problems on warranty period and insurance in construction contractor works 5-4. To formulate Guideline on contract management and alteration of construction contractor works (GLCM) 5-5. To carry out training/ seminar on Guideline on contract management and alteration of construction contractor works (GLCM) for dissemination 5-6. To compile the training program and seminars materials on Guideline on contract management and alteration of construction contractor works (GLCM)			
<b>Pre-Conditions</b>			- Jurisdiction of MOC is maintained.
			<b>&lt;Issues and countermeasures&gt;</b>
			No issues as at the end of March 2017.

\*1 CM: construction management  
 \*2 QM: quality management,  
 \*3 SM: safety management,  
 \*4 const.-contractor: construction contractor

Project Sheet II (Revised Plan of Operation)

Dated 31 January 2017

Project Title: \_\_\_\_\_

Inputs		Plan	2015			2016				2017				2018		Remarks	Monitoring	
			Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I		II	Issue
<b>Expert</b>																		
0 Chief Adviser		Plan															no issues	-
		Actual																
1 Team Leader / Construction Management		Plan															ditto	-
		Actual																
2 Deputy Team Leader / Construction Management / Evaluation of Engineering Capacity		Plan															ditto	-
		Actual																
3 Cost Estimation (1)		Plan															ditto	-
		Actual																
4 Quality Management (1)		Plan															ditto	-
		Actual																
5 Quality Management (2)		Plan															ditto	-
		Actual																
6 Quality Management (3)		Plan															ditto	-
		Actual																
7 Quality Management (4)		Plan															ditto	-
		Actual																
8 Quality Management (5)		Plan															ditto	-
		Actual																
9 Safety Management (1)		Plan															ditto	-
		Actual																
10 Safety Management (2) / Environment Management (1)		Plan															ditto	-
		Actual																
11 Safety Management (3) / Environment Management (2)		Plan															ditto	-
		Actual																
12 Warranty and Insurance		Plan															ditto	-
		Actual																
13 Construction Contactor Grading System		Plan															ditto	-
		Actual																
14 Training and Seminar Arrangement (1)		Plan															ditto	-
		Actual																
15 Public Relations / Training and Seminar Arrangement (2) / Cost Estimation (2)		Plan															ditto	-
		Actual																
<b>Total M/M of Short-term Experts (1) to (15)</b>		Plan	15.6	18.9	17.3	25.1	21.7	16.4							76.9		almost as per planned	-
		Actual	15.6	18.9	15.9	24.4									74.8			
<b>Activities</b>		Plan													Responsible Organization	Achievements	Issue & Countermeasures	
<b>Sub-Activities</b>		Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan	GOV	
<b>00 Activities for Overall Project Management:</b>																		
(1) Preparation of Work Plan		Plan														Complete a month late.	No negative effects to other activities	
		Actual																
(2) Review on Construction Law and Related Regulations		Plan														Continue, due to regulations kept issuing.	Review regulations, following the order of PO.	
		Actual																
(3) Set up for PDM Objectively Verifiable Indicators		Plan														Complete for original PDM and additional activities.	-	
		Actual																
(4) Monitoring and preparation, update and discussion of Monitoring Sheet		Plan														Monitoring Sheet ver. 4 was prepared.	-	
		Actual																
(5) Holding Joint Steering Committee (JSC)		Plan														Fourth JSC meeting is arranged in April 2017.	-	
		Actual																
(6) Training in Japan		Plan														Second training in Japan was complete.	-	
		Actual																
(7) Public Relations		Plan														Being carried out.	-	
		Actual																
(8) Project Completion Report		Plan														-	-	
		Actual																

Activities Sub-Activities	Plan	2015				2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures
		Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan	GOV		
<b>0 Activities for Outputs 1, 2&amp;3 :</b>																			
(1) Selection of case-studied projects	Plan																	6 project sites were visited and reviewed.	Originally 3 and finally 6 projects, then took longer.
	Actual																		
<b>1 Activities for Output 1: SACQI Capacity for identifying necessary items concerning quality management of construction works is enhanced.</b>																			
(1) To review the current practices of QM in construction works and identify issues	Plan																	Issues were identified through case studies.	-
	Actual																		
(2) To prepare SPQM following international standards on quality management of construction works and review it	Plan																	Draft SPQM was prepared in Dec 2015.	-
	Actual																		
(3) To estimate the cost of QM for the case-studied projects based on the management plan and review it	Plan																	Cost of QM was estimated in Apr. 2016.	-
	Actual																		
(4) To prepare Guideline for Quality Inspection (GLQI) for State Authorities & PO/PMU	Plan																	GLQI is being prepared.	-
	Actual																		
(5) To carry out training seminar on SPQM and GLQI for dissemination	Plan																	Training workshops in 2016 were complete.	-
	Actual																		
<b>2 Activities for Output 2: SACQI Capacity for identifying necessary items concerning safety management of construction works is enhanced.</b>																			
(1) To review the current practices of SM in construction works and identify issues	Plan																	Issues were identified through case studies.	-
	Actual																		
(2) To prepare SPSM following international standards on safety management of construction works and review it	Plan																	Draft SPSM was prepared in Dec. 2015.	-
	Actual																		
(3) To estimate the cost of SM for the case-studied projects based on the management plan and review it	Plan																	Cost of SM was estimated in May 2015.	-
	Actual																		
(4) To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works	Plan																	SPEM is being prepared.	-
	Actual																		
(5) To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & PO/PMU	Plan																	GLSEI is being prepared.	-
	Actual																		
(6) To carry out training seminar on SPSM, SPEM and GLSEI for dissemination	Plan																	Training workshops in 2016 were complete.	-
	Actual																		
<b>3 Activities for Output 3: CED Capacity for integrating construction management into the cost estimation for indirect construction contractor works is enhanced.</b>																			
(1) To review methodology and consistency of current cost estimation system in construction works in accordance with Construction Law 2014 in comparing with the one of Japan	Plan																	Review was completed	-
	Actual																		
(2) To formulate "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" and review it	Plan																	GLCE-1 was submitted in Apr. 2016.	-
	Actual																		
(3) To formulate "Guideline on the cost estimation for direct construction contractor works (GLCE-2)" and review it	Plan																	GLCE-2 is being formulated.	-
	Actual																		
(4) To prepare draft circulars for authorizing "Guideline on the cost estimation for construction works (GLCE)"	Plan																	Draft circular is being prepared.	-
	Actual																		
(5) To carry out training/seminar on "Guideline on the cost estimation for construction contractor works (GLCE)" for dissemination	Plan																	Training workshops in 2016 were complete.	-
	Actual																		
(6) To compile the training program and the seminar materials on the above GLCM	Plan																	Program & materials are being compiled.	-
	Actual																		

Activities	Sub-Activities	Plan	2015				2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures
			Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan	GOV		
<b>4 Activities for Output 4: CAMA Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.</b>																				
(1) To identify problems on (i)evaluation of const.-contractors engineering capacity, (ii)engineer qualification system, and (iii)const.-contractor work performance evaluation system		Plan																	Problems were identified.	-
		Actual																		
(2) To commence the const.-contractor work performance evaluation (WPE) system		Plan																	Two trials for WPE were carried out.	-
		Actual																		
(3) To develop evaluation method on engineering capacity of const.-contractors and review it		Plan																	Evaluation method was submitted in Oct. 2016.	-
		Actual																		
(4) To prepare draft circular for the evaluation method on engineering capacity of const.-contractors		Plan																	Draft circular was submitted in Oct. 2016	-
		Actual																		
(5) To carry out trainings/seminar of evaluation method on engineering capacity of const.-contractors for dissemination		Plan																	Training workshops in 2016 were complete.	-
		Actual																		
(6) To prepare draft of (i)const.-contractor grading system and (ii)const.-contractor selection mechanism and review it		Plan																	Grading system was prepared in Oct. 2016.	-
		Actual																		
(7) To review function of PMU		Plan																	Review was completed	-
		Actual																		
(8) To prepare improvement of regulation on qualification necessary for PMUs and review it		Plan																	Improvement of regulation on qualification for PMUs was prepared in Jun. 2016	-
		Actual																		
<b>5 Activities for Output 5: CED &amp; SACQI Capacity for contract management of construction contractor works is enhanced.</b>																				
(1) To identify problems on contract management in construction works		Plan																	Problems were identified.	-
		Actual																		
(2) To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works		Plan																	Differences and gaps were itemized.	-
		Actual																		
(3) To identify problems on warranty period and insurance in construction works		Plan																	Problems on warranty etc. was identified.	-
		Actual																		
(4) To formulate Guideline on contract management and alteration of construction contractor works (GLCM) and review them		Plan																	GLCM was submitted in March 2017.	-
		Actual																		
(5) To carry out trainings/seminar on G/L on contract management and alteration of construction contractor works for dissemination		Plan																	Training workshops in 2016 were complete.	-
		Actual																		
(6) To compile the training program and seminars details of guideline on contract management and alteration of construction contractor works		Plan																	Program & materials are being compiled.	-
		Actual																		
<b>Duration / Phasing</b>		Plan																	Progress is as per planned.	-
		Actual																		
<b>Monitoring Plan</b>		Plan																		
		Actual																		
Monitoring																				
<b>Joint Steering Committee</b>		Plan																	Fourth JSC meeting is arranged in Apr. 2017.	-
		Actual																		
<b>Submission of Monitoring Sheet &amp; Interim Report</b>		Plan																	Monitoring Sheet ver. 4 was prepared.	-
		Actual																		
Reports/Documents																				
<b>Work Plan</b>		Plan																	Complete a month late.	No negative effects to other activities
		Actual																		
<b>Project Completion Report</b>		Plan																		
		Actual																		



**TO Chief Representative of JICA VIET NAM Office****PROJECT MONITORING SHEET**

Project Title: the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects

Version of the Sheet: Ver. 5 (Term: April 2015 – September 2017)

Name: YAMAUCHI Masafumi

Title: Team Leader / Construction Management

Submission Date: September 30, 2017

**I. Summary****1 Progress****1-1 Progress of Inputs**

- ♦ The input of Japanese short term experts is 98.1 man-months (MM). Ratio (actual MM/ planned MM) is 99.5 %.
- ♦ Detail input is shown in the Monitoring Sheet II.

**1-2 Progress of Activities**

- ♦ Overall progress is as per planned, though some activities are ahead and some are behind.
- ♦ The progress of each activity is shown below and in the Monitoring Sheet II.

[00 Activities for Overall Project Management]

- ♦ (1) The Project team (Counterparts: C/Ps and experts) explained the Work Plan in the Kick-off meeting held in June 2015 and all participants (same member of Joint Steering Committee: JSC) in the meeting accepted it. The Project team submitted it to Japan International Cooperation Agency (JICA) in July 2015.
- ♦ (2) The Government of Viet Nam (GOV) completed issuance of the related regulations to the Project activities and the Project team reviewed those regulations. The Project team re-arranged the reviews on those regulations, following the order in the Plan of Operation (PO) and therefore, the reviews did not affect the progress of the Project.
- ♦ (3) The Project team finalized all objectively verifiable indicators in the original Project Design Matrix (PDM) in August 2015. The Project team revised the PDM by including additional activities for Output 1, 2 and 3 as version 3 and finalized the objectively verifiable indicators for additional activities in September 2016.
- ♦ (4) The Project team prepared the Monitoring Sheet (Summary and Sheet I & II) Version 5 as of the end of September 2017 and will submit it to JICA in October 2017.
- ♦ (5) The Project team arranged the fifth Joint Steering Committee (JSC) meeting in October 2017. The Project team will explain the progress of the Project.
- ♦ (6) Thirteen C/Ps visited Japan and completed the training in November 2015. Fifteen C/Ps visited Japan and completed the training in November 2016.
- ♦ (7) The Project team carries out activities in Public Relations, publishing the introduction of the Project for Capacity Enhancement in Cost Estimation, Contract Management, Quality and Safety in Construction Investment Projects (CCQS Project), four times of the JSC meeting held in 2015, 2016 and 2017, Training in Japan in 2015 and 2016, dialogues with Vietnamese construction industries in April 2016 and March 2017, and Training Workshops held at Hanoi, Da Nang and HCMC in November and December 2016 and at Hanoi, HCMC and Can Tho in June 2017 through web site of the Ministry of Construction (MOC), JICA and construction related medias in Viet Nam as well as CCQS Project web site.

## [0 Activities for Output 1, 2 &amp; 3]

- ♦ The Project team selected two case study projects under JICA loan and completed site visits and collection of documents by September 2015.
- ♦ The Project team also selected three case study projects under state budget and completed site visits and collection of documents by the end of 2015.
- ♦ Latter (projects under state budget) in particular took longer time than expected, as MOC does not directly manage construction projects and with this reason selection of case study projects took long time unexpectedly.
- ♦ As recommended and requested in the third JSC meeting, the Project team visited Song Hau Thermal Power Plant Project in Hau Giang Province in December 2016. The Project team discussed in regard to construction management with PMU and the contractor, and collected the documents from the project.
- ♦ All case studies were completed successfully. The Project team incorporated the review results to output documents in each Output.
- ♦ The Project team visited and reviewed six case study projects instead of three projects originally planned in the Work Plan. Therefore, the Project team spent more time for case study projects.

## [1 Activities for Output 1]

- ♦ (1) The Project team reviewed the current practices of quality management in construction works and identified the issues related to quality management through the case studies.
- ♦ (2) The Project team prepared the draft Standard Plan for Quality Management (SPQM) in December 2015 and then, discussed / revised and agreed it in the Component Project Management Unit (CPMU) meetings. The Project team presented SPQM in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in Viet Nam (Vietnam Association of Construction Contractors: VACC, Vietnam Engineering Construction Association: VECAS and the Overseas Construction Association of Japan Inc.: OCAJI) and discussed with and collected comments for SPQM from them in April 2016. After reviewing all comments, the Project team compiled SPQM and submitted it to MOC in June 2016 with the covering letter. C/Ps sent SPQM to outside experts for their comments and they (two experts) submitted the comments to C/Ps in April 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed and agreed in CPMU meetings. The Project team revised SPQM as final version in accordance with the action plans and submitted it again to MOC with the covering letter in August 2017.
- ♦ (3) The Project team made cost estimation of Quality Management (QM) in April 2016 and then provided the cost data to Output 3 for the Guideline on the Cost Estimation for Indirect Construction Contractor Works, after discussed and confirmed in CPMU meeting of Output 1. Some discussions were carried out with C/Ps of Output 3 and differences in cost for quality management were found between C/Ps of Output 3 and the cost estimation at the end of 2016. The Project team reviewed it further and revised it. The Project team eventually agreed the revised figures in CPMU meeting in July 2017.
- ♦ (4) The Project team commenced to discuss with C/Ps in regard to quality supervision and inspection for State Authorities (SAs) and Project Owners (POs) / Project Management Units (PMUs) and compiled the draft Guideline for Quality Supervision and Inspection (GLQI) in June 2017. C/Ps sent the draft GLQI to outside experts for their comments and they (two experts) submitted the comments to C/Ps in August 2017. The Project team presented the draft GLQI in PCU meeting in September 2017. At the same time, the Project team reviewed the comments (including further comments of C/Ps) and prepared action plans on the comments. The Project team revised GLQI as final version in accordance with the action plans and will present it in CPMU in October 2017. The Project team will present GLQI in the fifth JSC meeting and submit it to MOC in October 2017 with a covering letter.
- ♦ (5) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016. C/P and the expert of Output 1 made presentations and



discussions with the participants.

[2 Activities for Output 2]

- ♦ (1) The Project team reviewed the current practices of safety management in construction works and identified the issues related to safety management through the case studies. In addition, the Project team reviewed the current practices of environment management in construction works as additional activities and identified the issues related to environment management through the case studies.
- ♦ (2) The Project team prepared the draft Standard Plan for Safety Management (SPSM) in December 2015 and then, discussed / revised and agreed it in CPMU meetings. The Project team presented SPSM in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for SPSM from them in April 2016. After reviewing all comments, the Project team compiled SPSM and submitted it to MOC in June 2016 with the covering letter. C/Ps sent SPSM to outside experts for their comments and they (two experts) submitted the comments to C/Ps in March 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed in CPMU meetings. The Project team revised SPSM as final version in accordance with the action plans in May 2017.
- ♦ (3) The Project team made cost estimation of Safety Management (SM) in May 2016 and then provided the cost data to Output 3 for the Guideline on the Cost Estimation for Indirect Construction Contractor Works, after discussed and confirmed in CPMU meeting of Output 2.
- ♦ (4) The Project team commenced to discuss with C/Ps in regard to environment management in order to prepare the Standard Plan for Environment Management (SPEM). The Project team agreed in CPMU meeting that SPSM and SPEM would be combined to the Standard Plan for Safety and Environment Management (SPSEM). The Project team compiled the draft SPSEM in June 2017. C/Ps sent the draft SPSEM to outside experts for their comments and they (two experts) submitted the comments to C/Ps in August and September 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed and agreed in CPMU meetings. The Project team revised SPSEM as final version in accordance with the action plans and agreed in CPMU meeting in September 2017. The Project team will present it in PCU meeting and the fifth JSC meeting, and submit it to MOC in October 2017 with a covering letter.
- ♦ (5) The Project team also commenced to discuss with C/Ps in regard to safety and environmental inspection for SAs and POs/PMUs and compiled the draft Guideline for Safety and Environmental Inspection (GLSEI) in July 2017. C/Ps sent the draft GLSEI to outside experts for their comments and they (two experts) submitted the comments to C/Ps in August and September 2017. The Project team reviewed the comments and prepared action plans on the comments, which were discussed and agreed in CPMU meetings. The Project team revised GLSEI as final version in accordance with the action plans and agreed in CPMU meeting in September 2017. The Project team will present it in PCU meeting and the fifth JSC meeting, and submit it to MOC in October 2017 with a covering letter.
- ♦ (6) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016. C/P and the Chief advisor made presentations and discussions with the participants.

[3 Activities for Output 3]

- ♦ (1) The Project team completed the review of current cost estimation system in Viet Nam together with comparison with the system in Japan.
- ♦ (2) The Project team formulated the Guideline on the Cost Estimation for Indirect Construction Contractor Works (GLCE-1), and discussed / revised and agreed it in CPMU meetings in April 2016. The Project team presented GLCE-1 in the meeting between MOC Project Preparation Members and JICA team and submitted it in the second JSC meeting in April 2016. The Project team also arranged the dialogue with the construction industries in

Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for GLCE-1 from them in April 2016. After reviewing all comments, the Project team compiled GLCE-1 and submitted it to MOC in July 2016 with the covering letter.

- ♦ (3) The Project team commenced to discuss with C/Ps in regard to the cost estimation for direct construction contractor works in order to formulate the Guideline on the Cost Estimation for Direct Construction Contractor Works (GLCE-2). The Project team agreed in CPMU meeting that GLCE- 1 and 2 would be combined to the Guideline on the Cost Estimation for Construction Contractor Works (GLCE). The Project team compiled the draft GLCE in August 2017. As C/Ps provided comments on the draft, the Project team reviewed and revised GLCE as final version and agreed in CPMU meeting in September 2017. The Project team will present GLCE in PCU meeting and the fifth JSC meeting, and submit it to MOC in October 2017 with a covering letter.
- ♦ (4) The Project team commenced the preparation of draft circular for the Guideline on the Cost Estimation (GLCE). The project team finalized the draft circular and agreed it in CPMU meeting in September 2017.
- ♦ (5) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016. C/P and the expert of Output 3 made presentations and discussions with the participants.
- ♦ (6) The Project team commenced to compile the training program and materials on GLCE for future trainings after CCQS Project

#### [4 Activities for Output 4]

- ♦ (1) The Project team identified problems and issues on evaluation of construction contractor engineering capacity, engineer qualification system and construction contractor work performance evaluation system in CPMU meetings.
- ♦ (2) The Project team confirmed the process to commence work performance evaluation system and prepared the road map for the process in CPMU meetings. The Project team made three trials of work performance evaluation and re-compiled the implementation manual by taking comments in three trials for future implementation.
- ♦ (3) The Project team developed the evaluation method on engineering capacity of const.-contractor, and discussed / revised and agreed it in CPMU meetings in September 2016. The Project team presented the evaluation method in the meeting between MOC Project Preparation Members and JICA team in September 2016 and presented and submitted it in the third JSC meeting in October 2016. The Project team then submitted it to MOC in October 2016 with the covering letter. The Project team arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for the evaluation method on engineering capacity from them in March 2017.
- ♦ (4) In parallel with the development of the evaluation method on engineering capacity, the Project team prepared the draft circular for the evaluation method on engineering capacity of const.-contractor and discussed and agreed it in CPMU meeting in October 2016. The Project team presented it in the third JSC meeting in October 2016 and submitted it to MOC together with the evaluation method on engineering capacity with the covering letter.
- ♦ (5) The Project team held the first training workshops at Hanoi, Da Nang and HCMC in November and December 2016 and the second ones at Hanoi, HCMC and Can Tho in June 2017. C/P and the expert of Output 4 made presentations and discussions with the participants.
- ♦ (6) The Project team identified problems and issues on the grading system in CPMU meetings. The Project team included the construction contractor grading system in the evaluation method on engineering capacity and submitted it to MOC with the covering letter in October 2016 through the same process stated in (3) above.

The Project team identified problems and issues on construction contractor selection mechanism in CPMU meetings. The Project team discussed and prepared the construction contractor selection mechanism in CPMU meetings in March 2017. The Project team also arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and

OCAJI) and discussed with and collected comments for the selection mechanism from them in March 2017. After reviewing all comments, the Project team compiled the selection mechanism and present it in PCU meeting and the fourth JSC meeting in April 2017. The Project team submitted it to MOC with the covering letter in April 2017.

- ♦ (7) The Project team confirmed contents on new regulation of Project Management Units (PMUs) in CPMU meetings, after reviewing the related regulations.
- ♦ (8) The Project team prepared the document on improvement of regulation of PMU qualification and then, discussed / revised and agreed it in CPMU meetings in June 2016. The Project team presented the improvement of regulation of PMU qualification in the meeting between MOC Project Preparation Members and JICA team in August 2016. After reviewing all comments received, the Project team compiled the improvement of regulation of PMU qualification and submitted it to MOC in August 2016 with the covering letter.

#### [5 Activities for Output 5]

- ♦ (1) The Project team identified problems on contract management in Viet Nam in CPMU meetings through the case studies and comments received from construction industries in Viet Nam (VACC, VECAS and OCAJI).
- ♦ (2) The Project team compiled differences and gaps between the International Federation of Consulting Engineers (FIDIC) Conditions of Contract and the Viet Nam Contract in CPMU meetings.
- ♦ (3) The Project team discussed and identified problems on warranty period and insurance in CPMU meetings.
- ♦ (4) The Project team discussed and compiled the draft Guideline on Contract Management and Contract Alteration (GLCM) in CPMU meetings in October 2016. The Project team reviewed / revised GLCM and discussed for finalization in CPMU meeting in February 2017. The Project team then arranged the dialogue with the construction industries in Viet Nam (VACC, VECAS and OCAJI) and discussed with and collected comments for the draft GLCM from them in March 2017. The Project team also presented the draft GLCM in PCU meeting in March 2017. After reviewing all comments, the Project team compiled GLCM and submitted it to MOC in March 2017 with the covering letter. The Project team presented GLCM in the fourth JSC meeting in April 2017.
- ♦ (5) The Project team held the training workshops at Hanoi, Da Nang and HCMC in November and December 2016 and the second ones at Hanoi, HCMC and Can Tho in June 2017. C/P and the expert of Output 5 made presentations and discussions with the participants.
- ♦ (6) The Project team compiled the training program and materials on GLCM for future trainings after CCQS Project and discussed it in CPMU meetings in June to August 2017. The Project team continues to add some other materials for future trainings.  
In order for MOC to prepare planning of future trainings, the Project team issued the correspondence to MOC (Request of Continuous Trainings on Outputs of CCQS Project) in August 2017.

### 1-3 Achievement of the Project Purpose and Output

- ♦ As of the end of September 2017, none of the objectively verifiable indicators for Project Purpose come to the time to verify.
- ♦ (1-1 & 2-1) Draft of SPQM in Output 1 and SPSM in Output 2 were prepared and submitted in CPMU in December 2015 as per the original plan. They were presented in the meeting between MOC Project Preparation Members and JICA team and then submitted in the second JSC meeting in April 2016. The objectively verifiable indicators shown in 1-1 and 2-1 in the Monitoring Sheet I were confirmed with the means of verification.
- ♦ (1-2 & 2-2) Costs for Quality Management (QM) in Output 1 and Safety Management (SM) in Output 2 were estimated in April and May 2016 and cost data for QM and SM were provided to Output 3. The objectively verifiable indicators shown in 1-2 and 2-2 in the Monitoring Sheet I were confirmed with the means of verification.

- ♦ (1-3 & 2-3) Final version of GLQI in Output 1 and GLSEI in Output 2 were prepared and submitted in CPMU in September 2017 as per the original plan. GLQI was presented in PCU meeting in September 2017 and will be so in the fifth JSC meeting in October 2017. GLSEI will be presented in PCU and the fifth JSC meeting in October 2017. The objectively verifiable indicators shown in 1-3 and 2-3 in the Monitoring Sheet I were confirmed with the means of verification.
- ♦ (3-1) The Guideline on the Cost Estimation for Indirect Construction Contractor Works (GLCE-1) was complete and presented in the meeting between MOC Project Preparation Members and JICA team and then submitted in the second JSC meeting in April 2016. The objectively verifiable indicator shown in 3-1 in the Monitoring Sheet I was confirmed with the means of verification.
- ♦ (3-2) The Guideline on the Cost Estimation for Direct and Indirect Construction Contractor Works (GLCE) was complete and will be presented in PCU meeting and then submitted in the fifth JSC meeting in October 2017. The objectively verifiable indicator shown in 3-2 in the Monitoring Sheet I will be confirmed with the means of verification in October 2017.
- ♦ (4-1) The evaluation method on engineering capacity of const.-contractors was prepared, discussed / revised and agreed in CPMU meetings and presented in the meeting between MOC Project Preparation Members and JICA team in September 2016. It was submitted in the third JSC meeting in October 2016. The objectively verifiable indicator shown in 4-1 in the Monitoring Sheet I was confirmed with the means of verification.
- ♦ (4-2) The evaluation method on engineering capacity of const.-contractors together with other output documents in Output 4 were presented in the training workshops in November and December of 2016 and June of 2017. Score on the comprehension test of the evaluation method on engineering capacity etc. in the second training workshops in June 2017 was recorded 76 %. The objectively verifiable indicator shown in 4-2 in the Monitoring Sheet I was confirmed with the means of verification.
- ♦ (4-3) The draft circular for authorizing the evaluation method on engineering capacity was prepared, discussed and agreed in CPMU meetings and submitted in the third JSC meeting in October 2016. The objectively verifiable indicator shown in 4-3 in the Sheet I was confirmed with the means of verification.
- ♦ (4-4) The construction contractor grading system was prepared, discussed / revised and agreed in CPMU meetings within the document for the evaluation method on engineering capacity stated in (4-1) above and presented in the meeting between MOC Project Preparation Members and JICA team in September 2016. It was submitted in the third JSC meeting in October 2016. The objectively verifiable indicator shown in 4-4 in the Sheet I was confirmed with the means of verification.
- ♦ (4-5) Improvement of regulation on qualification for PMUs was prepared and submitted in CPMU in June 2016. It was presented in the meeting between MOC Project Preparation Members and JICA team and then submitted to MOC in August 2016 with the covering letter. The objectively verifiable indicator shown in 4-5 in the Monitoring Sheet I was confirmed with the means of verification.
- ♦ (5-1 & 5-2) Guideline on Contract Management and Contract Alteration (GLCM) was prepared, discussed / revised and agreed in CPMU meetings in February 2017 and presented in PCU meeting in March 2017. It was submitted to MOC in March 2017 with the covering letter and presented in the fourth JSC meeting in April 2017. The objectively verifiable indicators shown in 5-1 & 5-2 in the Monitoring Sheet I were confirmed with the means of verification shortly.
- ♦ (5-3) GLCM in Output 5 was presented in the training workshops in November and December of 2016 and June of 2017. Score on the comprehension test for GLCM in the second training workshops in June 2017 was recorded 78 %. The objectively verifiable indicator shown in 5-2 in the Monitoring Sheet I was confirmed with the means of verification.
- ♦ Other objectively verifiable indicators for outputs are yet to be the time to verify.
- ♦ Referring the contents in **1-2 Progress of Activities**, the other objectively verifiable indicators for project purpose and outputs are expected to achieve.

- ♦ Achievement for each output is shown in achievement column of the Monitoring Sheet I.

#### **1-4 Changes of Risks and Actions for Mitigation**

- ♦ Nothing has been changed in risks and measures for mitigation.

#### **1-5 Progress of Actions undertaken by JICA**

- ♦ JICA continues to provide cooperative actions to the Project.

#### **1-6 Progress of Actions undertaken by Government of Viet Nam**

- ♦ On October 4, 2016, the Prime Minister signed Decision No. 1989/QD-TTg on approval for investment policy for the implementation of Technical Cooperation Project. The Decision clearly stated name of the Project: “Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects” and Agency: Ministry of Construction. The grant budget of the Government of Japan is 71,010,608,000 VND and the Vietnamese state budget is 10,956,677,160 VND.
- ♦ Based on the Government’s approval on the investment policy for the implementation of the Project, MOC Minister approved the Project Document in Decision No. 1128/QD-BXD dated October 28, 2016.
- ♦ Following the approval of the Project Document, the Minister of MOC also issued the Decision No. 1131a/QD-BXD dated October 31, 2016 to establish the Project Coordination Unit (PCU) with 12 members, headed by Dr. Pham Khanh Toan, Director General of International Cooperation Department.
- ♦ Directors of CPMUs were appointed by MOC Minister in Decision No. 1132a/QD-BXD dated October 31, 2016. Upon the approval of the MOC Minister of CPMU Directors, the Directors issued Decisions to establish their CPMUs accordingly. Names of C/Ps were officially informed by PCU and CPMUs through sending copies of the above mentioned Decisions to the JICA team.
- ♦ First official PCU meeting was held on January 13, 2017.

#### **1-7 Other Remarkable/Considerable Issues related/affected to the Project (such as other JICA’s projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

- (1) In the first JSC meeting held in October 2015, there were two requests from MOC to JICA team to have information of construction works in Japan, such as 1) information on ratio of labor cost in construction project, 2) how packages in construction project are determined. In response, JICA team made the following explanation with the papers in the meeting between MOC Project Preparation Members and JICA team in January and March 2016;
  - 1) Ratio of Labor Cost in Construction Projects in Japan
  - 2) Construction Package Size in Japan
- (2) C/Ps in Output 1 requested to have data for assessment of force-bearing safety and operation safety on existing facilities (regulations, methods and practices in other countries) in order to prepare circular for assessment of safety on existing facilities.

JICA team searched and provided the following data to C/Ps in June to August 2017.

- 1) Standard Specifications for Concrete Structures for Maintenance issued by Japan Society of Civil Engineers (2007 version in English)
- 2) The Building Standard Law, Enforcement Order and Enforcement Regulation issued in Japan (2008 version in English)
- 3) Fire Service Act in Japan (2008 version in English)
- 4) Building Control Act (2013 version), Existing Building Retrofit (2010 version), Building Maintenance and Strata Management (Lift, Escalator and Building Maintenance ) Regulation (2016 version) and Design for Maintainable Checklist (2016) from Building Construction Authority in Singapore (English)
- 5) Bridge Inspection and Evaluation Manual for Thailand (2013) compiled in JICA

Project (English)

- 6) Recommendation for Practice of Survey, Diagnosis and Repair for Deterioration of Reinforced Concrete Structure (1997 version in Japanese) and Principle Guide to Performance Survey and Diagnosis for Buildings (2008 version in Japanese) issued by Architect Institute of Japan
- 7) Introduction of “2017 Infrastructure Report Card” issued in every four years by American Society of Civil Engineers
- 8) Digest version of Infrastructure Health Report (road sector) (2016 version in English) and the same of Infrastructure Health Report (Brief explanation, river / road / sewerage sector) (2017 version in Japanese)

## **2 Delay of Work Schedule and/or Problems (if any)**

### **2-1 Detail**

- (1) Set-up of PCU and Official Nomination of C/Ps: As soon as receiving Decision No.1898/QD-TTg dated October 4, 2016 of the Prime Minister on approval for investment policy for the implementation of the Project, the Project Preparation Members submitted the Minister of Construction to approve the Project Document, which was officially approved on October 28, 2016. Following the approval of the Project Document, PCU and CPMUs were established and member of PCU and CPMUs were nominated in October to December 2016.

### **2-2 Cause**

- (1) Set-up of PCU and Official Nomination of C/Ps: Procedures for approval of Project Document as stipulated by GOV took more time than expected.

### **2-3 Action to be taken**

- (1) Set-up of PCU and Official Nomination of C/Ps: Although PCU was not officially set up, MOC Project Preparation Members fulfilled the functions of PCU and the meetings between MOC Project Preparation Members and JICA team were held once in a month to review status of the Project and discuss issues during implementation of the Project. The CPMU meetings were also held smoothly with almost constant members. Therefore actual progress on activities was not affected.

### **2-4 Roles of Responsible Persons/Organization (JICA, Government of Viet Nam etc.)**

- ◆ With the cooperative actions of JICA and MOC, the delays stated above were within manageable range and those were resolved entirely.

## **3 Modification of the Project Implementation Plan**

### **3.1 PO**

- ◆ The original Plan of Operation (PO) was revised, presented and accepted in the third JSC meeting in October 2016, since the additional activities for Output 1, 2 and 3 were confirmed to be carried out.

### **3.2 Other Modifications on Detailed Implementation Plan**

- ◆ The project implementation flow and the work breakdown structure (WBS) was revised, presented and approved in the third JSC meeting in October 2016, since the additional activities for Output 1, 2 and 3 were confirmed to be carried out.

**4 Preparation of Government of Viet Nam toward after Completion of the Project**

- ♦ The Government of Viet Nam prepares to commence “State Budget Project for the Improvement of the Construction Norm and Price System” based on discussions and studies particularly in Output 3 of CCQS Project. Proposal for the State Budget Project is under review in the office of Prime Minister and expected to be approved shortly.
- ♦ MOC prepares the roadmaps for each Output as well as future trainings for dissemination of the output documents after completion for CCQS Project.

**II. Project Monitoring Sheet I & II** as enclosed

*Interim Report V has been compiled to record the activities in the CCQS Project as at the end of September 2017, which supplements to the Project Monitoring Sheet.*

## Project Monitoring Sheet I

**Project Title:** Project for capacity enhancement in cost estimation, contract management, quality and safety in construction investment projects

**Project Period:** April 2015 to ~ March 2018 (36 months)

**Target Group:** Engineers from SACE, SACQI, and CAMA

**Target Area:** Whole Country

**Target Organization:** State Authority for Construction Economics (SACE), State Authority for Construction Quality Inspection (SACQI), and Construction Activities Management Authority (CAMA), Ministry of Construction (MOC)

Version: 5

Dated: 30 September 2017

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<p><b>Overall Goal</b></p> <p>Construction projects are managed according to the international standards.</p>	<p>1. The fatal labor accident frequency is reduced by 5 % every year after completion of the Project.</p> <p>2. AMC and similar organizations* conduct trainings on “Quality Management”, “Safety Management”, “Cost Estimation”, “Evaluation on Engineering Capacity of Const.-Contractors” and “Contract Management” based on the guidelines made by the Project once or more a year three years after completion of the Project.</p> <p>*Similar organization; Training center for staff of contracting ministry/agency</p> <p>3. More than 70 % of participants of the above trainings pass the comprehension test three years after completion of the Project.</p>	<p>1. Labor and safety statistics</p> <p>2. Training record of AMC and the similar organizations.</p> <p>3. Participants list and the test result</p>	<p>- Penalties are stiffened in a way all concerned parties comply with the guidelines made by the Project.</p>	-	-
<p><b>Project Purpose</b></p> <p>Regulations for management of public construction projects are improved.</p>	<p>1. More than half of the stakeholders* consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p> <p>*the stakeholders: stakeholders of the construction project such as representatives from the association of consultants and contractor, researcher/academic</p> <p>2. More than half of the project owners/employers consider the guidelines/methods etc. for the management of public construction projects approach the international level in December 2017, since the commencement of the Project.</p>	<p>1. Questionnaire and interview to the stakeholders.</p> <p>2. Questionnaire and interview to the project owners / employers.</p>	<p>- Penalties are stiffened in a way all concerning ministries comply with the guidelines made by the Project.</p>	<p>♦ Progress of all activities is almost as per PO. Hence, project purpose will be achieved.</p>	-



Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
<b>Outputs</b>					
1. (SACQI) Capacity for identifying necessary items concerning the quality management (QM) of construction works is enhanced.	1-1. Standard Plan for QM (SPQM) is prepared by December 2015. 1-2. Cost of QM for the case-studied projects is estimated by February 2016. 1-3. Guideline for Quality Inspection (GLQI) for State Authorities & POs/PMUs is prepared by September 2017.	1-1. SPQM and the prepared date 1-2. Estimated QM cost and the completed date 1-3. GLQI and the prepared date	- C/P bodies work in close cooperation each other.	<ul style="list-style-type: none"> <li>♦ (1-1) Draft SPQM was prepared in Dec. 2015.</li> <li>♦ (1-2) Cost of QM was estimated in Apr. 2016.</li> <li>♦ (1-3) GLQI was prepared in Sep. 2017</li> </ul>	-
2. (SACQI) Capacity for identifying necessary items concerning the safety management (SM) and environment management (EM) of construction works is enhanced.	2-1. Standard Plan for SM (SPSM) is prepared by December 2015. 2-2. Cost of SM for the case-studied projects is estimated by February 2016. 2-3. Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & POs/PMUs is prepared by September 2017.	2-1. SPSM and the prepared date 2-2. Estimated SM cost and the completed date 2-3. GLSEI and the prepared date		<ul style="list-style-type: none"> <li>♦ (2-1) Draft SPSM was prepared in Dec. 2015.</li> <li>♦ (2-2) Cost of SM was estimated in May 2016.</li> <li>♦ (2-3) GLSEI was prepared in Sep. 2017.</li> </ul>	-
3. (SACE) Capacity for integrating construction management (CM) into the cost estimation for construction contractor works is enhanced.	3-1. "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" is submitted to MOC by March 2016 for approval. 3-2. "Guideline on the cost estimation for direct construction contractor works (GLCE-2)" is submitted to MOC by September 2017 for approval. 3-3. More than 70 % of participants of trainings/seminars on "Guideline on the cost estimation for construction contractor works (GLCE)" understand the contents. 3-4. Draft circular for authorizing GLCE is submitted to MOC by October 2017 for approval.	3-1. & 3-2 "Guideline on the cost estimation for direct / indirect construction contractor works" and the submitted date & the minutes of JSC 3-3. Participants list and the questionnaire result 3-4. Draft circular and the submitted date & the minutes of JSC		<ul style="list-style-type: none"> <li>♦ (3-1) GLCE-1 was submitted in Apr. 2016.</li> <li>♦ (3-2) GLCE-2 was submitted in Sep. 2017.</li> <li>♦ Others will be achieved, as progress is as per PO.</li> </ul>	-
4. (CAMA) Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.	4-1. "The evaluation method on engineering capacity of const.-contractors" is submitted to MOC by September 2016 for approval. 4-2. More than 70 % of participants of trainings/seminars on "the evaluation method on engineering capacity of const.-contractors" understand the contents. 4-3. Draft circular for authorizing the evaluation method on engineering capacity of const.-contractors is submitted to MOC by October 2016 for approval. 4-4. Draft of "const.-contractor grading system" is submitted to MOC by April 2017 for approval. 4-5. Improvement of regulation on qualification for PMUs is prepared by July 2016.	4-1. "The evaluation method on engineering capacity of const.-contractors" and the submitted date & the minutes of JSC 4-2. Participants list and the questionnaire result 4-3. Draft circular and the submitted date & the minutes of JSC 4-4. Draft of "const.-contractor grading system" and the submitted date & the minutes of JSC 4-5. Improvement of regulation on qualification for PMUs and the completed date		<ul style="list-style-type: none"> <li>♦ (4-1 &amp; 4-4) The evaluation method on engineering capacity &amp; grading system were submitted in Oct. 2016.</li> <li>♦ (4-2) Score of comprehension test in the training workshops in Jun. 2017 was more than 70 %.</li> <li>♦ (4-3) Draft circular was submitted in Oct. 2016.</li> <li>♦ (4-5) Improvement of regulation on qualification for PMUs was prepared in Jun. 2016.</li> </ul>	-
5. (SACE & SACQI) Capacity for contract management of construction contractor works is enhanced.	5-1. "Guideline on contract management" is submitted to MOC by February 2017 for approval. 5-2. "Guideline on contract alternation" is submitted to MOC by February 2017 for approval. 5-3. More than 70 % of participants of trainings/seminars on the above guideline understand the contents.	5-1. & 5-2. "Guideline on contract management" & "Guidelines on contract alternation" and the submitted date & the minutes of JSC 5-3. Participants list and the questionnaire result		<ul style="list-style-type: none"> <li>♦ (5-1&amp;5-2) GLCM was submitted in Mar. 2017.</li> <li>♦ (5-3) Score of comprehension test in the training workshops in Jun. 2017 was more than 70 %.</li> </ul>	-

Activities	Inputs		Important Assumptions
1-1. To review the current practices of QM in construction works as case studies based on the Quality Manual, and to identify issues 1-2. To prepare SPQM following international standards on quality management of construction works 1-3. To estimate the cost of QM for the case-studied projects based on the management plan 1-4. To prepare Guideline for Quality Inspection (GLQI) for State Authorities & POs/PMUs	<b>The Japanese side</b> (The Japanese side) 1. Long-term Expert - Chief Advisor 2. Short-term Experts 1) Team leader / Construction management 2) Deputy team leader / Construction management / Evaluation of engineering capacity of construction contractors 3) Cost estimation (1) 4) Quality management (1) 5) Quality management (2) 6) Quality management (3) 7) Quality management (4) 8) Quality management (5) 9) Safety management (1) 10) Safety management (2) / Environment management (1) 11) Safety management (3) / Environment management (2) 12) Warranty and insurance 13) Construction contractor grading system 14) Training and seminar arrangement (1) 15) Training and seminar arrangement (2) / Public relations / Cost estimation (2) 3. C/P Training: 10 persons/year X 3 times 4. Cost for holding trainings and seminars under the Project	<b>The Vietnamese side</b> (The Vietnamese side) 1. Assignment of counterpart personnel 2. Travel allowance and other expenses for participants of the trainings and seminars 3. Project office for the Japanese experts equipped by office facilities and utilities (such as water, electricity, and internet)	- C/P personnel remain in the same position.
2-1. To review the current practices of SM and EM in construction works as case studies based on the Safety Manual, and to identify issues 2-2. To prepare SPSM following international standards on safety management of construction works 2-3. To estimate the cost of SM for the case-studied projects based on the management plan 2-4. To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works 2-5. To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & POs/PMUs			
3-1. To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan. 3-2. To formulate "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" 3-3. To formulate "Guideline on the cost estimation for direct construction contractor works (GLCE-2)" 3-4. To prepare draft circular for authorizing "Guideline on the cost estimation for construction contractor works (GLCE)" 3-5. To carry out trainings/seminars on the above GLCE for dissemination. 3-6. To compile the training program and the seminar materials on the above GLCE.	4-1. To identify problems on (i) evaluation of const.-contractors' engineering capacity, (ii) engineer qualification system, and (iii) const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out trainings/seminars of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i) const.-contractor grading system and (ii) const.-contractor selection mechanism 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs	4-1. To identify problems on contract management in construction contractor works 4-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 4-3. To identify problems on warranty period and insurance in construction contractor works 4-4. To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) 4-5. To carry out trainings/seminars on the above GLCM for dissemination 4-6. To compile the training program and seminar materials on the above GLCM	<b>Pre-Conditions</b>
4-1. To identify problems on (i) evaluation of const.-contractors' engineering capacity, (ii) engineer qualification system, and (iii) const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out trainings/seminars of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i) const.-contractor grading system and (ii) const.-contractor selection mechanism 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs			4-1. To identify problems on contract management in construction contractor works 4-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 4-3. To identify problems on warranty period and insurance in construction contractor works 4-4. To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) 4-5. To carry out trainings/seminars on the above GLCM for dissemination 4-6. To compile the training program and seminar materials on the above GLCM
4-1. To identify problems on (i) evaluation of const.-contractors' engineering capacity, (ii) engineer qualification system, and (iii) const.-contractor work performance evaluation system 4-2. To commence the const.-contractor work performance evaluation system 4-3. To develop evaluation method on engineering capacity of const.-contractors 4-4. To prepare draft circular for the evaluation method on engineering capacity of const.-contractors 4-5. To carry out trainings/seminars of evaluation method on engineering capacity of const.-contractors for dissemination 4-6. To prepare draft of (i) const.-contractor grading system and (ii) const.-contractor selection mechanism 4-7. To review function of PMU 4-8. To prepare improvement of regulation on qualification necessary for PMUs	4-1. To identify problems on contract management in construction contractor works 4-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 4-3. To identify problems on warranty period and insurance in construction contractor works 4-4. To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) 4-5. To carry out trainings/seminars on the above GLCM for dissemination 4-6. To compile the training program and seminar materials on the above GLCM	4-1. To identify problems on contract management in construction contractor works 4-2. To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works 4-3. To identify problems on warranty period and insurance in construction contractor works 4-4. To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) 4-5. To carry out trainings/seminars on the above GLCM for dissemination 4-6. To compile the training program and seminar materials on the above GLCM	

\*1 CM: construction management  
 \*2 EM: environmental management  
 \*3 QM: quality management,  
 \*4 SM: safety management,  
 \*5 const.-contractor: construction contractor

Project Sheet II (Revised Plan of Operation)

Dated 30 September 2017

Project Title:

Inputs		Plan Actual	2015				2016				2017				2018		Remarks	Monitoring	
			II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Issue		Solution	
<b>Expert</b>																			
0	Chief Adviser	Plan Actual															no issues	-	
1	Team Leader / Construction Management	Plan Actual														ditto	-		
2	Deputy Team Leader / Construction Management / Evaluation of Engineering Capacity	Plan Actual														ditto	-		
3	Cost Estimation (1)	Plan Actual														ditto	-		
4	Quality Management (1)	Plan Actual														ditto	-		
5	Quality Management (2)	Plan Actual														ditto	-		
6	Quality Management (3)	Plan Actual														ditto	-		
7	Quality Management (4)	Plan Actual														ditto	-		
8	Quality Management (5)	Plan Actual														ditto	-		
9	Safety Management (1)	Plan Actual														ditto	-		
10	Safety Management (2) / Environment Management (1)	Plan Actual														ditto	-		
11	Safety Management (3) / Environment Management (2)	Plan Actual														ditto	-		
12	Warranty and Insurance	Plan Actual														ditto	-		
13	Construction Contactor Grading System	Plan Actual														ditto	-		
14	Training and Seminar Arrangement (1)	Plan Actual														ditto	-		
15	Public Relations / Training and Seminar Arrangement (2) / Cost Estimation (2)	Plan Actual														ditto	-		
Total M/M of Short-term Experts (1) to (15)		Plan Actual	15.6 15.6	18.9 18.9	17.3 15.9	25.1 24.4	21.7 23.3	16.4	98.6 98.1							almost as per planned	-		
<b>Activities</b>																			
<b>Sub-Activities</b>																			
<b>00 Activities for Overall Project Management:</b>																			
(1)	Preparation of Work Plan	Plan Actual														Complete a month late.	No negative effects to other activities		
(2)	Review on Construction Law and Related Regulations	Plan Actual														Complete review of regulations	Review of regulations, following the order of PO.		
(3)	Set up for PDM Objectively Verifiable Indicators	Plan Actual														Complete for original PDM and additional activities.	-		
(4)	Monitoring and Preparation, Update and Discussion of Monitoring Sheet	Plan Actual														Monitoring Sheet ver. 5 was prepared.	-		
(5)	Holding Joint Steering Committee (JSC) Meeting	Plan Actual														Fifth JSC meeting is arranged in Octo. 2017.	-		
(6)	Training in Japan	Plan Actual														Second training in Japan was complete.	-		
(7)	Public Relations	Plan Actual														Being carried out.	-		
(8)	Compilation of Project Completion Report	Plan Actual														-	-		

Activities	Sub-Activities	Plan	2015			2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures
			Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan		
<b>0 Activities for Outputs 1, 2&amp;3 :</b>																			
(1) Selection of case-studied projects		Plan																6 project sites were visited and reviewed.	Originally 3 and finally 6 projects, then took longer.
		Actual																	
<b>1 Activities for Output 1: SACQI Capacity for identifying necessary items concerning quality management of construction works is enhanced.</b>																			
(1) To review the current practices of QM in construction works and identify issues		Plan																Issues were identified through case studies.	-
		Actual																	
(2) To prepare SPQM following international standards on quality management of construction works and review it		Plan																Draft SPQM was prepared in Dec 2015.	-
		Actual																	
(3) To estimate the cost of QM for the case-studied projects based on the management plan and review it		Plan																Cost of QM was estimated in Apr. 2016.	-
		Actual																	
(4) To prepare Guideline for Quality Inspection (GLQI) for State Authorities & POs/PMUs		Plan																GLQI was prepared in Sep. 2017.	-
		Actual																	
(5) To carry out trainings/seminars on the above SPQM and GLQI for dissemination		Plan																Training workshops in 2016 were complete.	-
		Actual																	
<b>2 Activities for Output 2: SACQI Capacity for identifying necessary items concerning safety management and environment management of construction works is enhanced.</b>																			
(1) To review the current practices of SM and EM in construction works and identify issues		Plan																Issues were identified through case studies.	-
		Actual																	
(2) To prepare SPSM following international standards on safety management of construction works and review it		Plan																Draft SPSM was prepared in Dec. 2015.	-
		Actual																	
(3) To estimate the cost of SM for the case-studied projects based on the management plan and review it		Plan																Cost of SM was estimated in May 2015.	-
		Actual																	
(4) To prepare Standard Plan for Environment Management (SPEM) following international standards on environment management of construction works		Plan																SPEM was prepared in Sep. 2017.	-
		Actual																	
(5) To prepare Guideline for Safety and Environmental Inspection (GLSEI) for State Authorities & POs/PMUs		Plan																GLSEI was prepared in Sep. 2017.	-
		Actual																	
(6) To carry out trainings/seminars on the above SPSM, SPEM and GLSEI for dissemination		Plan																Training workshops in 2016 were complete.	-
		Actual																	
<b>3 Activities for Output 3: SACE Capacity for integrating construction management into the cost estimation for construction contractor works is enhanced.</b>																			
(1) To review methodology and consistency of current cost estimation system of construction works in accordance with Construction Law 2014 in comparing with the one of Japan		Plan																Review was completed	-
		Actual																	
(2) To formulate "Guideline on the cost estimation for indirect construction contractor works (GLCE-1)" and review it		Plan																GLCE-1 was submitted in Apr. 2016.	-
		Actual																	
(3) To formulate "Guideline on the cost estimation for direct construction contractor works (GLCE-2)"		Plan																GLCE-2 was submitted in Sep. 2017.	-
		Actual																	
(4) To prepare draft circulars for authorizing "Guideline on the cost estimation for construction contractor works (GLCE)"		Plan																Draft circular is being prepared.	-
		Actual																	
(5) To carry out trainings/seminars on the above GLCE for dissemination		Plan																Training workshops in 2016 were complete.	-
		Actual																	
(6) To compile the training program and the seminar materials on the above GLCE		Plan																Program & materials are being compiled.	-
		Actual																	

Activities Sub-Activities	Plan	2015				2016				2017				2018		Responsible Organization		Achievements	Issue & Countermeasures	
		Actual	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	Japan	GOV			
<b>4 Activities for Output 4: CAMA Capacity for organizing evaluation mechanism on engineering capacity and performance of construction contractors and PMUs is enhanced.</b>																				
(1) To identify problems on (i) evaluation of const.-contractors engineering capacity, (ii) engineer qualification system, and (iii) const.-contractor work performance evaluation system	Plan																	Problems were identified.	-	
	Actual																			
(2) To commence the const.-contractor work performance evaluation (WPE) system	Plan																	Three trials for WPE were carried out.	-	
	Actual																			
(3) To develop evaluation method on engineering capacity of const.-contractors and review it	Plan																	Evaluation method was submitted in Oct. 2016.	-	
	Actual																			
(4) To prepare draft circular for the evaluation method on engineering capacity of const.-contractors	Plan																	Draft circular was submitted in Oct. 2016	-	
	Actual																			
(5) To carry out trainings/seminars of evaluation method on engineering capacity of const.-contractors for dissemination	Plan																	Training workshops in 2016 & 2017 were complete.	-	
	Actual																			
(6) To prepare draft of (i) const.-contractor grading system and (ii) const.-contractor selection mechanism and review it	Plan																	Grading system was prepared in Oct. 2016. Selection mechanism was prepared in Apr. 2017.	-	
	Actual																			
(7) To review function of PMU	Plan																	Review was completed	-	
	Actual																			
(8) To prepare improvement of regulation on qualification necessary for PMUs and review it	Plan																	Improvement of regulation on qualification for PMUs was prepared in Jun. 2016	-	
	Actual																			
<b>5 Activities for Output 5: SACE &amp; SACQI Capacity for contract management of construction contractor works is enhanced.</b>																				
(1) To identify problems on contract management in construction works	Plan																	Problems were identified.	-	
	Actual																			
(2) To itemize differences and gaps between FIDIC contract and contract based on Vietnamese laws of construction contractor works	Plan																	Differences and gaps were itemized.	-	
	Actual																			
(3) To identify problems on warranty period and insurance in construction contractor works	Plan																	Problems on warranty etc. was identified.	-	
	Actual																			
(4) To formulate Guideline on contract management and contract alteration of construction contractor works (GLCM) and review it	Plan																	GLCM was submitted in March 2017.	-	
	Actual																			
(5) To carry out trainings/seminars on the above GLCM for dissemination	Plan																	Training workshops in 2016 & 2017 were complete.	-	
	Actual																			
(6) To compile the training program and seminar materials on the above GLCM	Plan																	Program & materials are being compiled.	-	
	Actual																			
<b>Duration / Phasing</b>																				
	Plan																	Progress is as per planned.	-	
	Actual																			
<b>Monitoring Plan</b>																				
	Plan																	Remarks	Issue	Solution
	Actual																			
<b>Monitoring</b>																				
<b>Joint Steering Committee</b>																				
	Plan																			
	Actual																	Fifth JSC meeting is arranged in Oct. 2017.	-	
<b>Submission of Monitoring Sheet &amp; Interim Report</b>																				
	Plan																			
	Actual																	Monitoring Sheet ver. 5 was prepared.	-	
<b>Reports/Documents</b>																				
<b>Work Plan</b>																				
	Plan																			
	Actual																	Complete a month late.	No negative effects to other activities	
<b>Project Completion Report</b>																				
	Plan																			
	Actual																			



## **Appendix 3 Minutes of Meetings**

**Kick off Meeting on 11 June 2015**

**First Joint Steering Committee Meeting on 13 October 2015**

**Second Joint Steering Committee Meeting on 13 April 2016**

**Third Joint Steering Committee Meeting on 12 October 2016**

**Fourth Joint Steering Committee Meeting on 12 April 2017**

**Fifth Joint Steering Committee Meeting on 18 October 2017**





## MINUTES OF MEETING

### KICK OFF MEETING

#### THE PROJECT FOR CAPACITY ENHANCEMENT IN COST ESTIMATION, CONTRACT MANAGEMENT, QUALITY AND SAFETY IN CONSTRUCTION INVESTMENT PROJECTS (CCQS PROJECT)

In accordance with the Record of Discussion (RD) signed on 27th January 2015 for the Project, the kick-off meeting was convened on 11th June 2015, attended by Vietnamese and Japanese members.

In the meeting the JICA Chief Advisor and Project Team Leader presented the draft work plan. The Vietnamese members then made comments and additional requests. Finally, Deputy Minister Bui Pham Khanh summarized the two sides' views.

In the meeting, the following consensus was reached:

1. The Draft Work Plan is basically accepted, including the contents, the name of the project, the implementation structure and the operation plan.
2. MOC kindly requests JICA to supplement overall studies on methods of cost determination and management; to extend studies on quality and safety management in construction projects.

JICA agreed to supplement above items in the later period of the project basing on performance evaluation of beginning period.

3. Cooperation among JICA project team and counterparts plays an important role in the study. Therefore, experts from related associations, institutes, academies, etc. are expected to take part in the project in roles of counterparts, making the project more effective.

The summary of the discussion by MOC and JICA, the meeting agenda and the list of participants are attached as annex.



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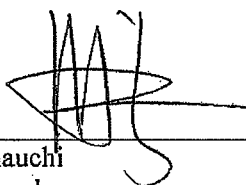
Kenichi Yamamoto  
Deputy Chief Representative  
Japan International Cooperation Agency (JICA)  
Vietnam Office

Ha Noi, 2015



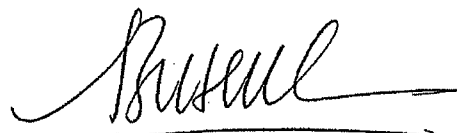
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Bui Pham Khanh  
Deputy Minister  
Ministry of Construction  
The Socialist Republic of Vietnam



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Masafumi Yamauchi  
Project Team Leader  
Project for Capacity Enhancement in Cost  
Estimation, Contract Management, Quality and  
Safety in Construction Investment Projects in  
Vietnam (CCQS Project)



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Nguyen Thi Bich Hue  
Deputy Director General  
International Cooperation Department  
Ministry of Construction  
The Socialist Republic of Vietnam

## SUMMARY OF THE DISCUSSION

### **1. Introduction by Ms. Nguyen Thi Bich Hue, Deputy Director General of International Cooperation Department (ICD), MOC**

- Brief introduction about the meeting and participants

### **2. Opening Remarks by Deputy Minister Bui Pham Khanh**

- From previous meetings, it's shown that there are some differences and confusion in the viewpoints of JICA and MOC. To reach an agreement, it is necessary to have further detailed discussion between JICA Team and the counterparts.
- Regarding cost management, at the moment, the most unresolved complicated problem in construction economics in Vietnam is cost management. Vietnamese side wishes to set up an overall cost estimation system, not just in quality and safety management as Vietnam's system hasn't been able to catch up with international's standards.

### **3. Opening Remarks by Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA**

- Regarding cost estimation in Output 1/2/3, JICA understands the wishes of the Vietnamese's side. However, as the time and resources are limited, for the time being, JICA would like to focus on cost estimation in quality and safety management first (for the first and a half year of the project) and bring tangible outputs. If good results are shown, the two sides can discuss and extend the scope of the study.

### **4. Presentation of work plan by Mr. Shoichi Takada – Chief Advisor and Mr. Masafumi Yamauchi – Project Team Leader**

#### **4.1. Detailed explanation of draft work plan**

#### **4.2. Requests for proceeding the Project**

- Counterparts nominations:

- Same personnel are hopefully selected in Output 1, 2 and 3 as those are deeply interrelated.
- Counterparts for trainings / seminars and public relations will be selected as well.
- Staffs from AMC and other organizations (Institute of Construction Economy, universities and VACC / VECAS) are considered to be counterparts.

- Selection of Projects for Output 1, 2 & 3:

- One project needs to be selected from state budget under MOC control.
- Two projects from JICA loans have been recommended to MOC by the Project team and MOC is requested to inform project owner (MOT) for CCQSP and site visit.

- Selection of Project for Output 4 & 5:

- Three projects for Output 4 for review of PMU functions need to be selected, which are managed by permanent PMU and one time PMU.
- Six projects (three from state budget and three from JICA loan) for Output 5 need to be selected.

- Objectively verifiable indicators in PDM: indicators need to be filled with figures and month / year for target.

### **5. Discussions**

#### **5.1. Mr. Hoang Tho Vinh – Deputy Director General of Construction Activities Management Authority (CAMA):**

- Basically agrees with the Draft work plan. But there are some comments as the following:

- According to the Draft work plan, the implementation of output 1-3 will complete until February 2016. But as the project started 2 months later than expectation, it is too rush. Time duration should extend to June 2016.
- Regarding case study projects, the chosen projects could be more than 3 and can be used for all outputs, which make the review more comprehensive.
- Contractor registration system and contractor works performance system were set up in the previous project. Due to the fact that the systems were based on Construction Law 2003 and now Construction Law 2014 has come into force, the system can't be fully utilized. It's is hoped that Japan experts can assist the Vietnamese side to help upgrade the systems in accordance with current changes.

**5.2. Mr. Pham Van Khanh, Director General of Construction Economics Department (CED):**

- Basically agrees with the content of the Draft work plan.
- Regarding Output 1/2/3, CED still expects to review cost management comprehensively, which means scope of the study should be extended when output 3 in work plan is drafted.
- CAMA's comment regarding the case study projects is agreed.

**5.3. Mr. Le Quang, Deputy Director General of State Authority for Construction Quality Inspection (SACQI):**

- Agrees with the Draft work plan.
- If it is possible, beside construction contractors, the study should focus on other stakeholders, as quality management is undertaken by PO, PMU, consultants and contractors.

**5.4. Mr. Tran Huu Ha, President of Academy of Managers for Construction and Cities (AMC):**

- Regarding trainings and seminars, staffs and experts from AMC can take part in as counterparts to make the project work more effectively.

**6. Wrap-up and Conclusion by Deputy Minister Bui Pham Khanh**

- Basically, all sides reach an agreement with the draft work plan explained and preparation for the implementation of the project will soon be finalized .
- It is well recognized that the ownership of counterparts is very important.
- Regarding Output 3, this is the one that gains a great deal of concern and attention from the Vietnamese side, especially in comparison between components in cost structure in Vietnam and Japan. The reform of cost management system in accordance with current practices and international integration trend will be discussed to be added to the study's scope when current output (the guideline on cost estimation for indirect construction contractor works) in the work plan is about to complete.
- Regarding output 4, as Circular 11 is on revision process to go accordance with Construction Law 2014, MOC hopes that software of registration system and contractor performance system will be included to review.
- Regarding output 5, scope of the study will be discussed for extension to contract management on other stakeholders like consultants, supervision, etc., when current output (the guideline on contract management and contract alterations of construction contractor works) in the work plan is about to complete.
- Regarding the ideas that same projects will be applied to all outputs and increasing number of projects to meet that idea shall be further discussed.
- List of relevant counterparts will soon be delivered to Deputy Minister for his approval within a week after the kick off meeting (June 11), including possible nomination of counterparts from



other organizations (AMC, Institute of Construction Economy, Universities and VACC/VECAS).

**7. Wrap-up and Conclusion by Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA**

- All the comments of the participants in kick off meeting are welcomed, appreciated and will be taken into account.
- JICA also agrees with the content of the Draft Work Plan.



**KICK-OFF MEETING AGENDA****Co-chaired by:****Mr. Bui Pham Khanh, Vice Minister of MOC****Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam**

Date: June 11, 2015

Time: 15:30 ~ 17:15

Venue: Room 252, MOC Building

	Activity	Presenter
15:30-15:40	ICD's introduction	Ms. Nguyen Thi Bich Hue, DDG, ICD, MOC
15:40-15:50	Leader of MOC's remarks	VM Bui Pham Khanh, MOC
15:50-16:00	JICA Leader's remarks	Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam
16:00-16:30	Presentation of proposed work plan	Mr. Shoichi Takada, Chief advisor Mr. Masafumi Yamauchi, Project Team Leader
16:30-16:50	Discussion	
16:50-17:15	Wrap-up and Conclusion	VM Bui Pham Khanh, MOC Mr. Kenichi Yamamoto, JICA

## LIST OF PARTICIPANTS – KICK OFF MEETING

No.	FULL NAME	POSITION
<b>Vietnamese side</b>		
1.	Mr. Bui Pham Khanh	Deputy Minister
2.	Mr. Pham Van Khanh	Director General, CED
3.	Mr. Dang Van Long	Director General, Planning-Finance Department
4.	Mr. Hoang Tho Vinh	Deputy Director General, CAMA
5.	Mr. Le Quang	Deputy Director General, SACQI
6.	Ms. Nguyen Thi Bich Hue	Deputy Director General, ICD
7.	Mr. Bui Van Duong	Deputy Director General, CAMA
8.	Mr. Tran Huu Ha	President, AMC
9.	Mr. Nguyen Tuan Dung	Head of Investment Division, Planning-Finance Department
10.	Mr. Nguyen Chien Thang	Principal Official, Ministry Office
11.	Mr. Pham Trung Kien	Official, Planning-Finance Department
12.	Mr. Nguyen Bac Thuy	Official, CED
13.	Mr. Nguyen Hong Linh	Official, SACQI
14.	Mr. Nguyen Thanh Tung	Official, ICD
15.	Ms. Nguyen Hien Anh	Official, ICD
16.	Ms. Chu Thi Yen	Official, AMC
17.	Mr. Le Thi My Phuong	Reporter, Construction Newspaper
18.	Mr. Bach Minh Tuan	Information Center
<b>Japanese side</b>		
1.	Mr. Kenichi Yamamoto	Deputy Chief Representative, JICA Vietnam Office
2.	Mr. Eiichi Murashima	Representative, JICA Vietnam Office
3.	Mr. Nguyen Dinh Thao	Senior Program Officer, JICA Vietnam Office
4.	Ms. Hoang Thi Tuat	Program Officer, JICA Vietnam Office
5.	Mr. Yosuke Tomizawa	Director for International Cooperation and Projects, Overseas Project Division, Policy Bureau, MLIT
6.	Mr. Yosuke Fukushima	Second Secretary, Embassy of Japan
7.	Mr. Shoichi Takada	Chief Advisor
8.	Mr. Masafumi Yamauchi	Project Team leader
9.	Mr. Mitsuhiro Narisawa	Deputy Project Team leader
10.	Mr. Seiichi Kusano	Cost estimation
11.	Mr. Koyo Ogasawara	Safety Management
12.	Mr. Kei Mamiya	Quality Management
13.	Mr. Masateru Tochinaka	Public Relations
14.	Ms. Dao Lan Huong	Assistant
15.	Mr. Le Quoc Anh	Assistant
16.	Ms. Luu Thi Tuyet Nhung	Secretary
17.	Ms. Pham Thi Hong Van	Secretary

CED: Construction Economics Department

CAMA: Construction Activities Management Authorities

SACQI: State Authority for Construction Quality Inspection

ICD: International Cooperation Department

AMC: Academy of Managers for Construction and Cities

## MINUTES OF MEETING

### THE FIRST JOINT STEERING COMMITTEE MEETING (JSC) FOR THE PROJECT FOR CAPACITY ENHANCEMENT IN COST ESTIMATION, CONTRACT MANAGEMENT, QUALITY AND SAFETY IN CONSTRUCTION INVESTMENT PROJECTS (CCQS PROJECT)

In accordance with the Record of Discussion (RD) signed on 27th January 2015 and the Work Plan submitted in July 2015 for the CCQS Project, the First JSC Meeting was convened on 13th October 2015, attended by Vietnamese and Japanese members.

In the Meeting, the JICA Chief Advisor and the Project Team Leader presented the Monitoring Sheet prepared by the Project Team. The participants then made some comments and requests. Finally, Deputy Chief Representative of JICA Viet Nam Office Mr. Yamamoto and Deputy Minister of MOC Mr. Bui Pham Khanh summarized the discussions and wrapped them up, the details of which are stipulated in the Summary of Discussion in Annex I.

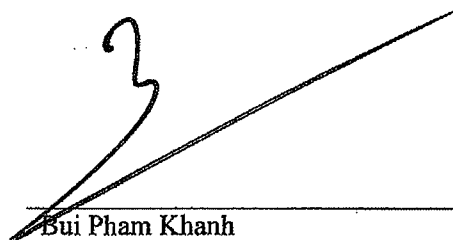
The Summary of Discussion, the Meeting Agenda and the List of Participants are attached as annex. It is hereby recorded that the Monitoring Sheet (Summary and Sheet I / II) and the Interim Report I were delivered in the Meeting.

*Ha Noi, 13 October 2015*



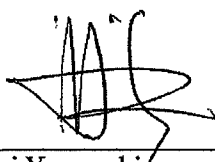
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Kenichi Yamamoto  
Deputy Chief Representative  
Viet Nam Office  
Japan International Cooperation Agency (JICA)



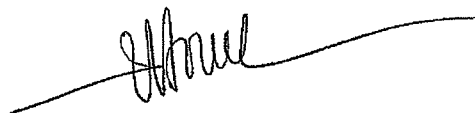
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Bui Pham Khanh  
Deputy Minister  
Ministry of Construction  
The Socialist Republic of Viet Nam



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Masafumi Yamauchi  
Project Team Leader  
Project for Capacity Enhancement in Cost  
Estimation, Contract Management, Quality and  
Safety in Construction Investment Projects in  
Viet Nam (CCQS Project)



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Pham Khanh Toan  
Director General  
International Cooperation Department  
Ministry of Construction  
The Socialist Republic of Viet Nam

## SUMMARY OF DISCUSSION

### 1. Introduction by Deputy Minister Mr. Bui Pham Khanh

Deputy Minister stated to commence the First JSC Meeting.

### 2. Presentation of Project Monitoring Sheet by Mr. Shoichi Takada – Chief Advisor and Mr. Masafumi Yamauchi – Project Team Leader

- Detailed explanation of the Progress of Activities in the Project carried out as at the end of September 2015 and the Planned Activities for near future. - Detailed explanation of the Delay of Work Schedule experienced since the commencement of the Project, including the causes and actions taken in each event.

### 3. Comments by Deputy Minister Mr. Bui Pham Khanh

- Regarding the delay of the project document, it is ICD's responsibility to speed up the finalization of the project document and ICD's Director General would give an explanation about this matter.

- Regarding Lai Chau Hydro Power Project, meeting at the site would be more effective as this is a complicated and big project. Thus, the Project Team (C/Ps and JICA experts) would plan for site visit to Lai Chau. SACQI is assigned to take the responsibility for the arrangement of this site visit.

- Regarding Output 2, Safety Division has been transferred from CAMA to SACQI. Mr. Le Quang from SACQI would have some comments on Safety Management.

- Regarding Output 3, there are differences in cost items between Viet Nam's cost estimation system and other countries' systems (including Japan). Therefore, this is an important output that receives a great deal of attention and concern. It is hoped that the Project Team would pay special attention to this output. CED and Construction Economics Institute would also focus on this output and actively participate for detailed comments and discussions.

- Regarding Output 4 (engineering capacity), as CAMA is in the preparation process for the new Circular on PMU, this output also needs thorough discussion. Later, CAMA's representative would give information on this important matter.

### 4. Discussion

#### 4.1. Mr. Pham Khanh Toan – Director General of International Cooperation Department (ICD)

From the beginning, it was planned that the project document would be finalized around September or October 2015. However, during the process, there are some issues that need more discussions with JICA, which resulted the delay of the project document. These are as follows:

- This Project is a complicated one with the involvement of many departments and authorities. Therefore, discussions among them to reach an agreement on the scope of work and the possibility of scope expansion in the future take more time than usual.

- The second thing is the allocation of local budget for each department and authority. Each department and authority prepared their own budget plan. Then, MOC discussed with JICA and requested JICA to clarify cost items for each output. This work also needs a great amount of time.



## ANNEX I

- The third one is the structure of the project document. It is important that the papers compiled by all departments and authorities need the consistency in implementation of activities. This matter was discussed in the meeting between MOC Project Preparation Team and JICA Team. Two sides exchanged views to reach an agreement. In the recent meeting in early October 2015, it was agreed that the project document would be completed by 20 October then be delivered to MOF and MPI for review and to the leader of MOC for approval.

### *4.2. Mr. Le Quang – Deputy Director General of State Authority for Construction Quality Inspection (SACQI)*

- In this Project, SACQI is in charge of two outputs: Output 1 (Quality Management) and Output 2 (Safety Management). As for site visits, SACQI together with the Project Team successfully conducted around HaNoi. For the smooth implementation of the site visit to Lai Chau Hydro Power Project, suggestions are made as follows:

- Schedule and agenda of the site visit shall be delivered to SACQI in advance at least one week or 10 days.

- As Lai Chau Hydro Power Project is a big project with a large number of packages, the Project Team shall choose a suitable and typical package for discussion in the site visit.

- The visit shall be on working days and last 2 - 3 days so that the Project Team would have enough time to carry out effective meeting and site inspection.

- Regarding Output 2 (Safety Management), labour accidents in construction is an alarming issue and concern from the public. Viet Nam has issued many regulations related to this matter. If possible, the JICA expert would provide the counterparts with some documents for reference, including:

- Japan's regulations on safety management
- Japan's technical standards on safety management
- Japan's guidelines/standards on safety management of several types of construction works (roads, bridges, etc.)

### *4.3. Mr. Hoang Tho Vinh – Deputy Director General of Construction Activities Management Authority (CAMA)*

- Basically agreed with the Monitoring Sheet, especially the part on Output 4.

- JICA Team and CAMA staffs conduct weekly meeting to review the current regulations and identify problems in the regulations and the sites (after site visits).

- As Safety Management Division has been transferred to SACQI. CAMA is now just in charge of Output 4 (engineering capacity of construction contractors and PMUs). In the beginning of the Project, it is expected that the Project would focus on the enhancement of engineering capacity of all stakeholders. However, after discussing about scope of the Project, it has been agreed that the study will focus on capacity of construction contractors first.

- There appears one difficulty regarding the commencement of Construction Contractor Work Performance Evaluation which requires the involvement of project owner, state authority, etc. In the previous Quality Technical Cooperation Project, a very useful method to evaluate the performance of

## ANNEX I

contractors was proposed, but it hasn't been applied in Viet Nam yet. Since the commencement of this system is considered precondition for applying Evaluation Method on Engineering Capacity of Construction Contractors, the JICA experts are requested to assist the Vietnamese side in revising and improving the system for successful commencement. And MOC side also needs to take necessary actions for the system to be applicable.

- As the JICA experts requested, CAMA would cooperate with the expert to collect the evaluation results of bidding documents.

- Regarding PMUs, a new model of professional PMU is introduced in the new Law on Construction. CAMA requested that the JICA experts would provide information of activities in the eight Regional Development Bureaus under the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) in Japan for reference. It should be noted that in order to ensure the quality of a construction works, it's not only the capacity of construction contractors but the capacity of PMUs and consultants are also needs to be focused on and improved.

#### *4.4. Ms. Truong Thi Thu Thanh – Deputy Director General of Construction Economics Department (CED)*

- Basically agreed with the Monitoring Sheets.

- CED takes charge of two outputs: Output 3 and Output 5. CED and JICA Team have discussed and reached an agreement on the scope of work for the outputs. The Project Team conducts weekly meeting and has reviewed in detail cost components in indirect cost and contract management in Vietnamese regulations. So far, many differences in term of indirect cost between Vietnamese and Japanese system as well as contract management under Vietnamese regulations and FIDIC contract were identified.

- If possible, the JICA Team would provide detail structure of cost estimation in other countries for better outputs.

#### *4.5. Deputy Minister Mr. Bui Pham Khanh comments and requests:*

- Regarding the costs for quality and safety management: in general, cost items are not much different between Viet Nam and Japan, but cost structures are different. It is proposed that the Project Team analyzes and makes detailed comparison in cost items regarding this matter together with CED and Construction Economics Institute, as the Vietnamese side pays much attention to this output.

- In Viet Nam there are some arguments between employers (contractors) and employees (workers) over basic salary for employees. It would be very helpful if the JICA experts provide information on ratio of labour cost in construction project.

- Regarding Output 4 and 5: in Viet Nam there are too many packages in a project. CAMA is preparing a new Circular on project management, and it is important to recognize how packages in a construction project would be determined in bidding plan and/or contract. This issue would need assistance from the JICA experts.

- At the moment, CED is preparing a new Circular guiding the EPC contract. The JICA expert is requested to provide comments and advices about the EPC contract.

#### *4.6. Mr. Yamauchi's reply on Deputy Minister requests:*

## ANNEX I

- Regarding ratio of labour cost in construction project, JICA experts would make discussions with CED, when collecting information on this matter.

- Regarding cost estimation in indirect cost portion, the Project Team has already made comparison in each item and identified the differences. In the next meetings, CPMU meeting for Output 3 would go into detail study about indirect cost portion. In this regard, one of important things is to review the number of engineers involved in construction works, which would be discussed later.

### *4.7. Mr. Tran Huu Ha - President of Academy of Managers for Construction and Cities (AMC)*

- For the time being, AMC would like to send staffs to CPMU meetings to get updated with the current progress and activities of the Project. It would be very helpful for the implementation of trainings and seminars in the future.

- The Project Team replied that CPMU schedule would be informed to AMC in advance.

- In future, AMC is always willing to assist the Project Team in training activities.

### *4.8. Mr. Hiroshi Anzo – Senior Project Formulation Advisor, JICA Viet Nam Office*

- All the comments of the participants are welcomed, appreciated and would be taken into account.

- Regarding the expansion of the scope of the Project, it needs to be emphasized that the priority of the Project is to focus on the proposed contents and bring out good outputs. When these are done successfully, further discussion on scope expansion would be commenced.

- One important thing is that all the outputs of this Project are implemented based on CPMU discussions. Thus, detailed view exchanges are highly encouraged, leading to the smooth implementation of this Project.

- Regarding practices of cost estimation system in Japan and other countries, it would be hard to get information of cost estimation system from other countries, as there are some limitations in resources, data access, etc. from other countries. Therefore, it would be better to focus on Japan's current practices.

### *4.9. Mr. Yosuke Fukushima – Second Secretary, Japanese Embassy*

- CCQS Project receives great attention from Japanese Embassy and thanks to the leadership of Deputy Minister Mr. Bui Pham Khanh as well as the mutual communications and understanding of the Project Team, the Project seems to be on track.

## **5. Wrap-up by Mr. Kenichi Yamamoto**

- It can be seen that the Project is going well and there are not worries for looking forward to good outcomes.

## **6. Wrap-up and conclusion by Deputy Minister Mr. Bui Pham Khanh**

- Basically, all participants reach agreement with the Monitoring Sheet (progress and plan of activities and delay events of work schedule) explained.

- Regarding Output 4 (engineering capacity of construction contractors and PMUs), as mentioned before, currently MOC is preparing new Circulars on these matters (one for contractors and consultants, the other for PMUs). However, according to the Project Monitoring Sheet I, improvement of regulation on

## ANNEX I

qualification for PMU and evaluation method on engineering capacity of construction contractors would be ready in July and September of next year (2016), and it might be too late for the new Circulars. MOC would like to suggest that the Project Team would carry out intensive discussions to incorporate improvements in parallel with preparation of new circulars. In addition, the Project Team is requested to focus on capacity of consultants as well.

- As PMU is in charge of deciding packages in a construction project and there are too many packages in Viet Nam, the Project Team would discuss more about this issue.

- It is confirmed that the project document would be completed and submitted to relevant authorities before 20 October 2015. At the same time the budget allocation plan for 2016 would be completed.

- MOC side agreed to pay full attention to the approved scope in the Project and the possibility of scope expansion would be discussed later.

- Regarding site visit to Lai Chau Hydro Power Project, SACQI and Main Contractor (Song Da Corporation) would take charge.

**FIRST JOINT STEERING COMMITTEE MEETING  
AGENDA**

**Co-chaired by:**

**Mr. Bui Pham Khanh, Deputy Minister of MOC**

**Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam**

Date: October 13, 2015

Time: 15:00 ~ 17:15

Venue: Room 252, MOC Building

Time	Activity	Presenter
15:00 ~ 15:05 (05 minutes)	Leader of MOC's opening	Deputy Minister Mr. Bui Pham Khanh
15:05 ~ 15:45 (30 minutes)	Presentation of Project Monitoring Sheet	Mr. Shoichi Takada, Chief Advisor Mr. Masafumi Yamauchi, Project Team Leader
15:45 ~ 16:00 (45 minutes)	Leader of MOC's comments	Deputy Minister Mr. Bui Pham Khanh
16:00 ~ 17:00 (60 minutes)	Discussion	All participants
17:00 ~ 17:15 (15 minutes)	Wrap-up and Conclusion	Mr. Kenichi Yamamoto, JICA Deputy Minister Mr. Bui Pham Khanh, MOC

*Handouts:*

1. *Monitoring sheets (summary version in power point)*
2. *Project monitoring sheets (full version in word)*
3. *Interim report I*

## LIST OF PARTICIPANTS – FIRST JSC MEETING

No.	FULL NAME	POSITION
<b>Vietnamese side</b>		
1.	Mr. Bui Pham Khanh	Deputy Minister
2.	Mr. Pham Khanh Toan	Director General, ICD
3.	Mr. Hoang Tho Vinh	Deputy Director General, CAMA
4.	Mr. Le Quang	Deputy Director General, SACQI
5.	Ms. Truong Thi Thu Thanh	Deputy Director General, CED
6.	Ms. Nguyen Thi Bich Hue	Deputy Director General, ICD
7.	Mr. Tran Huu Ha	President, AMC
8.	Mr. Nguyen Chien Thang	Senior Official, Ministry Office
9.	Ms. Do Nguyet Anh	Senior Official, ICD
10.	Mr. Nguyen Thanh Tung	Official, ICD
11.	Mr. Bui Thai Binh	Official, CED
12.	Ms. Nguyen Hien Anh	Official, ICD
13.	Mr. Nguyen Hong Linh	Official, SACQI
14.	Ms. Vu Bich Hien	Official, AMC
15.	Mr. Tran Thi Minh Ha	Official, AMC
<b>Japanese side</b>		
1.	Mr. Kenichi Yamamoto	Deputy Chief Representative, JICA Viet Nam Office
2.	Mr. Hiroshi Anzo	Senior Project Formulation Advisor, JICA Viet Nam Office
3.	Ms. Dao To Cam	Program Officer, JICA Viet Nam Office
4.	Mr. Yosuke Fukushima	Second Secretary, Embassy of Japan
5.	Mr. Shoichi Takada	Chief Advisor
6.	Mr. Masafumi Yamauchi	Project Team leader
7.	Mr. Mitsuhiro Narisawa	Deputy Project Team leader
8.	Mr. Ken Nishino	Construction Contractor Grading System
9.	Mr. Shuichi Yashiro	Training and Seminar Arrangement (i)
10.	Mr. Kei Mamiya	Quality Management
11.	Ms. Dao Lan Huong	Assistant
12.	Mr. Le Quoc Anh	Assistant
13.	Ms. Luu Thi Tuyet Nhung	Secretary
14.	Ms. Pham Thi Hong Van	Secretary
15.	Ms. Nguyen Thi Thuy Dung	Secretary

MOC: Ministry of Construction

ICD: International Cooperation Department

CED: Construction Economics Department

SACQI: State Authority for Construction Quality Inspection

CAMA: Construction Activities Management Authorities

AMC: Academy of Managers for Construction and Cities

## MINUTES OF MEETING

### THE SECOND JOINT STEERING COMMITTEE MEETING (JSC) FOR THE PROJECT FOR CAPACITY ENHANCEMENT IN COST ESTIMATION, CONTRACT MANAGEMENT, QUALITY AND SAFETY IN CONSTRUCTION INVESTMENT PROJECTS (CCQS PROJECT)

In accordance with the Record of Discussion (RD) signed on 27th January 2015 and following the success of the First JSC Meeting, the Second JSC Meeting was convened on 13th April 2016, attended by Vietnamese and Japanese members.

In the Meeting, the JICA Chief Advisor and the Project Team Leader presented the Monitoring Sheet version 2. The project experts then presented briefly the draft products of Output 1, 2 & 3, followed by comments and requests from the Vietnamese counterparts. The Project team responded to all the comments. Finally, Deputy Chief Representative of JICA Viet Nam Office Mr. Yamamoto and Deputy Minister of MOC Mr. Bui Pham Khanh summarized the discussions and wrapped them up, the details of which are stipulated in the Summary of Discussion in Annex I.

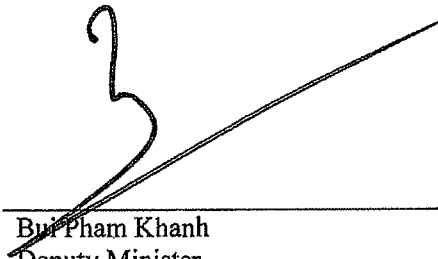
The Summary of Discussion, the Meeting Agenda and the List of Participants are attached as annex. It is hereby recorded that the Monitoring Sheet version 2 (Summary and Sheet), the Interim Report II, Draft Standard Plan for Quality Management (Draft SPQM), Draft Standard Plan for Safety Management (Draft SPSM) and Draft Guideline on Cost Estimation for Indirect Construction Works in Viet Nam (GLCE) were delivered in the Meeting.

*Ha Noi, 13 April 2016*



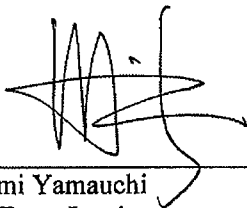
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Kenichi Yamamoto  
Deputy Chief Representative  
Viet Nam Office  
Japan International Cooperation Agency (JICA)



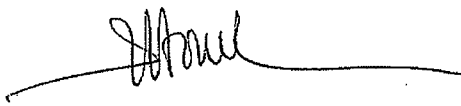
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Bui Pham Khanh  
Deputy Minister  
Ministry of Construction  
The Socialist Republic of Viet Nam



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Masafumi Yamauchi  
Project Team Leader  
Project for Capacity Enhancement in Cost  
Estimation, Contract Management, Quality and  
Safety in Construction Investment Projects in  
Viet Nam (CCQS Project)



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Pham Khanh Toan  
Director General  
International Cooperation Department  
Ministry of Construction  
The Socialist Republic of Viet Nam

## SUMMARY OF DISCUSSION

### **1. Introduction by Mr. Pham Khanh Toan – Director General, International Cooperation Department (ICD), MOC**

- Brief introduction about the meeting and the participants.

### **2. Opening Remarks by Mr. Bui Pham Khanh, Deputy Minister, MOC**

- The full participation of the two sides' members is highly appreciated.
- Ministry of Construction pays special attention to this Project and after nearly one year of implementation, thanks to the cooperation from JICA and Embassy of Japan in Viet Nam together with the Chief Advisor and the Project team, positive results are achieved.
- For the MOC side, MOC's officials have tried their best to cooperate with the Japanese experts, contributing to the smooth implementation of the Project.

- However, it needs to be reminded that unexpected difficulties in administrative procedures still remain. It requires the two sides to put more efforts into to solve these problems. It is believed that with JICA's assistance, the Project Document will soon be submitted to the Prime Minister and officially approved.

### **3. Opening Remarks by Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA**

- The participation of the counterparts, especially Mr. Bui Pham Khanh, Deputy Minister as well as their cooperation is highly welcomed.
- Regarding unexpected difficulties, it is hoped that the two sides will actively exchange views to find solutions altogether.

### **4. Presentation of Project Monitoring Sheet Version 2 by Mr. Shoichi Takada – Chief Advisor and Mr. Masafumi Yamauchi – Project Team Leader**

- Detailed explanation of the Progress of Activities in the Project carried out as at the end of March 2016 and the Planned Activities for near future.

### **5. Presentation of draft products of Output 1,2 & 3**

*5.1. Detailed explanation of Output 1 – Draft Standard Plan for Quality Management (Draft SPQM) by Mr. Masafumi Yamauchi*

*5.2. Detailed explanation of Output 2 – Draft Standard Plan for Safety Management (Draft SPSM) by Mr. Koyo Ogasawara – Safety Expert*

*5.3. Detailed explanation of Output 3 – Guideline on Cost Estimation for Indirect Construction Works in Viet Nam by Mr. Seiichi Kusano – Cost Estimation Expert*

### **6. Comments by Mr. Bui Pham Khanh, Deputy Minister**

- Direct discussion with PMUs, contractors and consultants etc. at the site in case study projects is highly appreciated, especially for Lai Chau Hydropower project.



## ANNEX I

- Regarding Output 1 (Quality Management), for special projects (national importance, Class 1 projects, etc.), sample of quality monitoring (or inspection) system during construction, at completion and after completion is very important and may be supplemented.

- Regarding Output 3 (Cost Estimation), it can be seen that the differences between Japan's system and Viet Nam's system have been identified. Further clarification is required. One important issue that the Vietnamese side pays much attention at the moment is the cost increases more than expected. Suggestion in this issue is appreciated.

### 7. Discussion

*7.1. Mr. Le Quang – Deputy Director General of State Authority for Construction Quality Inspection (SACQI):*

In this Project, SACQI is in charge of two outputs: Output 1 (Quality Management) and Output 2 (Safety Management). Comments on these two Outputs activities are as follows:

- Regarding Output 1, up to now, 17 CPMU meetings have been conducted, during which the two sides have discussed and identified one big issue: In Viet Nam, QM from PO and SVC side is mainly focused while in Japan and other developed countries, good QM starts at basic level – contractors. It means that Viet Nam's system goes away from the world trend.

+ Some new contents such as countermeasures for quality defects during construction, photo management of construction activities have been included in the draft SPQM. These are really helpful for good QM of construction works.

+ Due to limitations in time and human resources, this Project focuses on several major construction works only. Still, the Project will be very effective.

+ Recommendations: SPQM is mainly utilized for construction contractor and MOC expects to have some sort of quality inspection guideline / manual for use of PO / PMU / SVC.

- Regarding Output 2, similar to Output 1, MOC suggests to prepare Safety Inspection Guidelines/Manual for use of PO / PMU / SVC.

+ Standard Plan for Environment Management (SPEM) is also separately prepared, since safety division in SACQI takes care of environment protection during and after construction.

- Further recommendations will be made and discussed in the coming CPMU meetings.

*7.2. Mr. Pham Van Khanh - Director General of Construction Economics Department (CED):*

- Regarding Output 3, thanks to the cooperation and assistance from Chief Advisor and the Project team, differences between cost estimation practices in Japan and Viet Nam have been clarified and recognized. Cost items in indirect cost have been clarified, following market mechanism.

+ However, the base of direct cost estimation was not reviewed for 30 years, and there are lots of gaps and differences in direct cost estimation in Viet Nam. Direct costs in Viet Nam include some costs classified in indirect costs in GLCE and do not follow applicable technologies, construction methods or site conditions. Indirect cost and direct cost are two components, which always go together for construction works. Therefore, if preparing Guidelines for indirect cost and excluding direct cost, the

## ANNEX I

Guidelines could not be fully applied. Hence, MOC likes the Project team to study direct cost estimation in Viet Nam as well, after GLCE is complete.

- Regarding Output 5, though Output 5 activities are still being implemented, it is believed that the outcome will be very good.

*7.3. Mr. Nguyen Chi Hieu - Deputy Director General of Construction Activities Management Authority (CAMA):*

- CAMA is in charge of Output 4 (Engineering Capacity of Construction Contractors and PMUs) which is still under research stage (problems identification and discussion). For this stage, 18 CPMU meetings have been conducted and two big issues have been identified as follows:

+ In Viet Nam, there has not been a comprehensive contractor capacity evaluation system both in engineering and financial aspects. CAMA (MOC) can decisively determine technical evaluation, but roadmap is required to conduct financial evaluation.

+ During tendering process, price is much focused.

- In order to make trial of contractor work performance evaluation, CAMA needs to have assistance from SACQI, since original work performance evaluation system was compiled in the previous Quality TCP with SACQI. And, SACQI is more specialized for site management works than CAMA.

*7.4. The Project Team's responses:*

- Regarding quality monitoring, usual quality inspection system during construction has been incorporated in SPQM and contractor work performance evaluation system in Output 4 may be utilized for that at completion.

+ If monitoring means some data collection and verification of soundness of structure on special projects, those projects usually specify contents of monitoring in design and specification, what data shall be measured with frequency (e.g. once per month) and then those are analyzed to confirm soundness of structure. There seems no standard as a sample in Japan.

- Regarding Output 1 & 2, Quality and Safety Inspection Guideline /Manual for use of PO / PMU /SVC are essential and considered to meet the Output 1 & 2 (Capacity for identifying necessary items concerning the quality management (QM) and safety management (SM) of construction works is enhanced.), and therefore those would be commenced after Activity 2 & 3 of Output 1 & 2 is complete.

+ In regard to SPEM (Standard Plan for Environment Management), it is better to prepare, as the reason stated the above and SPEM definitely enhances capacity of SACQI, too.

+ For these, availability of appropriate experts shall be checked. If it is confirmed that the experts are available, scope expansion shall be discussed and agreed among JICA, MOC and Project team, including additional expenses.

- Regarding Output 3, in GLCE, "Expense (indirect cost and overhead) Trend Survey (ETS)" is recommended to commence in order to have real expense and assistance to CED for trial of ETS is considered most essential to meet the Output 3 (Capacity for integrating construction management (CM) into the cost estimation for indirect construction contractor works is enhanced). In order to determine extents of study on direct cost as requested by MOC, discussion with DG & C/Ps of CED is needed at the soonest. For the above, again availability of appropriate experts shall be checked. If it is confirmed that the

## ANNEX I

experts are available, scope expansion shall be discussed and agreed among JICA, MOC and Project team, including additional expenses.

- Regarding Output 4, to have effective achievement in Output 4, the points stated in 7.3 above would be discussed in CPMU meeting further.

### **8. Wrap-up and Conclusion by Mr. Bui Pham Khanh, Deputy Minister**

- After presentation and discussion between two sides, it seems that Output 1 & 2 have less difficulty and is being implemented smoothly. One thing should be noted is to prepare Quality and Safety Inspection Guideline /Manual for PO side. MOC is now preparing a new Circular on PMU's capacity and other stakeholders. This content should be included in the coming CPMU discussions of Output 1, 2 and 4.

- Regarding Output 3, a comprehensive study on cost estimation system (both direct and indirect cost included) is expected and has been requested many times. However, as project's time and experts are limited, CED should make clear the important components to be studied in direct cost.

- The Project Document is really important for the implementation of the Project so both sides should work together and catch up with the progress. It is hoped that the Project Document will be approved in April.

### **9. Wrap-up and Conclusion by Mr. Kenichi Yamamoto**

- All comments and requests by the participants are welcomed and will be taken into account.

- One critical issue is the possibility of scope expansion in Output 1, 2 and 3, especially to direct cost analysis. As mentioned previously, there are many limitations in time and resources so JICA will consider if it is possible to carry out further study on these aspects. It is suggested that MOC selects the most important portions for studying and have detail discussion with the Project team. JICA will consider providing financial assistance for future activities.

**SECOND JOINT STEERING COMMITTEE MEETING  
AGENDA**

Co-chaired by:

**Mr. Bui Pham Khanh, Deputy Minister of MOC  
Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam**

Date: April 13, 2016

Time: 15:00 ~ 17:25

Venue: Room 252, MOC Building

Time	Activity	Presenter
15:00 ~ 15:05 (05 minutes)	Introduction	Mr. Pham Khanh Toan, Director General, International Cooperation Dept. (ICD)
15:05 ~ 15:10 (5 minutes)	MOC Leader's remarks	Mr. Bui Pham Khanh, Deputy Minister, MOC
15:10 ~ 15:15 (5 minutes)	JICA Leader's remarks	Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam
15:15 ~ 15:45 (30 minutes)	Presentation of Project Monitoring Sheet	Mr. Shoichi Takada, Chief Advisor Mr. Masafumi Yamauchi, Project Team Leader
15:45 ~ 16:30 (45 minutes)	Presentation of Output 1- SPQM Presentation of Output 2- SPSM Presentation of Output 3- GLCE	Mr. Masafumi Yamauchi, Project Team Leader Mr. Koyo Ogasawara, Expert for Output 2 Mr. Seiichi Kusano, Expert for Output 3
16:30 ~ 17:20 (50 minutes)	Discussion	
17:20 ~ 17:25	Wrap-up and Conclusion	Mr. Bui Pham Khanh, Deputy Minister, MOC Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam

*Handouts:*

1. Monitoring sheets (summary version in power point)
2. Project monitoring sheets (full version in word)
3. Interim report I
4. SPQM – Standard Plan for Quality Management
5. SPSM – Standard Plan for Safety Management
5. GLCE – Guideline on Cost Estimation for Indirect Construction Contractor Works

## LIST OF PARTICIPANTS – SECOND JSC MEETING

No.	FULL NAME	POSITION
<b>Vietnamese side</b>		
1.	Mr. Bui Pham Khanh	Deputy Minister
2.	Mr. Pham Khanh Toan	Director General, ICD
3.	Mr. Pham Van Khanh	Director General, CED
4.	Mr. Nguyen Chi Hieu	Deputy Director General, CAMA
5.	Mr. Le Quang	Deputy Director General, SACQI
6.	Mr. Nguyen Anh Dung	President, AMC
7.	Mr. Hoang Gia Trung	Officer, AMC
8.	Mr. Nguyen Chien Thang	Senior Official, Ministry Office
9.	Ms. Do Nguyet Anh	Senior Official, ICD
10.	Ms. Nguyen Hien Anh	Official, ICD
11.	Mr. Bui Thai Binh	Official, CED
12.	Mr. Nguyen Kim Dung	Official, CAMA
13.	Mr. Nguyen The Anh	Official, SACQI
14.	Mr. Le Ngoc Quy	Deputy Head of Safety Division, SACQI
15.	Mr. Nguyen Hong Linh	Official, SACQI
16.	Mr. Bach Minh Tuan	Information Center, MOC
<b>Japanese side</b>		
1.	Mr. Kenichi Yamamoto	Deputy Chief Representative, JICA Vietnam Office
2.	Mr. Hiroshi Anzo	Senior Project Formulation Advisor, JICA Vietnam Office
3.	Ms. Dao To Cam	Program Officer, JICA Vietnam Office
4.	Mr. Yosuke Fukushima	Second Secretary, Embassy of Japan
5.	Mr. Shoichi Takada	Chief Advisor
6.	Mr. Masafumi Yamauchi	Project Team Leader
7.	Mr. Mitsuhiro Narisawa	Deputy Project Team Leader
8.	Mr. Koyo Ogasawara	Safety Management
9.	Mr. Seiichi Kusano	Cost Estimation
10.	Mr. Masateru Tochinaka	Training & PR
11.	Ms. Dao Lan Huong	Technical Assistant
12.	Mr. Le Quoc Anh	Technical Assistant
13.	Ms. Nguyen Thi Thuy Dung	Secretary
14.	Ms. Pham Thi Hong Van	Secretary

MOC: Ministry of Construction

ICD: International Cooperation Department

CED: Construction Economics Department

SACQI: State Authority for Construction Quality Inspection

CAMA: Construction Activities Management Authorities

AMC: Academy of Managers for Construction and Cities



## MINUTES OF MEETING


### THE THIRD JOINT STEERING COMMITTEE MEETING (JSC) FOR THE PROJECT FOR CAPACITY ENHANCEMENT IN COST ESTIMATION, CONTRACT MANAGEMENT, QUALITY AND SAFETY IN CONSTRUCTION INVESTMENT PROJECTS (CCQS PROJECT)

In accordance with the Record of Discussion (RD) signed on 27th January 2015 and following the success of the Second JSC Meeting, the Third JSC Meeting was convened on 12th October 2016, attended by Vietnamese and Japanese members.

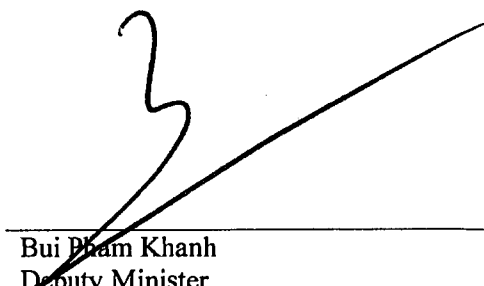
In the Meeting, the Chief Advisor and the Project Team Leader presented the Monitoring Sheet version 3. Then the Deputy Project Team Leader made the presentation of Output 4. The meeting proceeded to the discussion session in which the Vietnamese counterparts made comments and additional requests and the Project Team responded to all of them. JICA side also expressed their ideas. Finally, Deputy Chief Representative of JICA Viet Nam Office Mr. Yamamoto and Deputy Minister of MOC Mr. Bui Pham Khanh summarized the discussions and wrapped them up, the details of which are stipulated in the Summary of Discussion in Annex I.

The Summary of Discussion, the Meeting Agenda and the List of Participants are attached as annex. It is hereby recorded that the Monitoring Sheet version 3 (Summary and Sheet I & II), the Project Design Matrix version 3, the Interim Report III and the Documents of Output 4 were delivered and accepted in the Meeting.

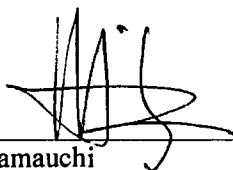
*Ha Noi, 12 October 2016*



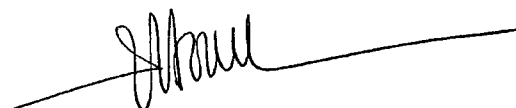
Kenichi Yamamoto  
Deputy Chief Representative  
Viet Nam Office  
Japan International Cooperation Agency (JICA)



Bui Pham Khanh  
Deputy Minister  
Ministry of Construction  
The Socialist Republic of Viet Nam



Masafumi Yamauchi  
Project Team Leader  
Project for Capacity Enhancement in Cost  
Estimation, Contract Management, Quality and  
Safety in Construction Investment Projects in  
Viet Nam (CCQS Project)



Pham Khanh Toan  
Director General  
International Cooperation Department  
Ministry of Construction  
The Socialist Republic of Viet Nam

## SUMMARY OF DISCUSSION

### **1. Introduction by Mr. Pham Khanh Toan – Director General, International Cooperation Department (ICD), MOC**

- Brief introduction about the meeting and the participants.

### **2. Opening Remarks by Mr. Bui Pham Khanh – Deputy Minister, MOC**

- The full participation of the two sides' members is highly appreciated.
- Ministry of Construction (MOC) is pleased to announce that the Prime Minister officially approved the policy of CCQS Project in Decision 1898 issued on October 4, 2016. It is resulted from ongoing efforts and cooperation between the two sides. Further actions will be taken for the official approval of CCQS Project, which will be soon.
- MOC is also delighted to know that the proposal for the expansion of Output 1, 2 and 3 has been approved. Additional activities will be implemented as schedule discussed and agreed by the two sides.
- Regarding Output 4, detailed progress and plan of this Output will be presented later today.
- Regarding coming trainings and seminars in November and December, it is hoped that they will bring good outcomes.
- MOC hopes that the two sides will continue to cooperate closely, not only in CCQS Project but also in other projects in the future.

### **3. Opening Remarks by Mr. Kenichi Yamamoto - Deputy Chief Representative, JICA Viet Nam Office**

- JICA Viet Nam Office highly appreciates the efforts of MOC side for the approval of the policy of CCQS Project. This will encourage the Project Team to continue their work.
- As CCQS Project is the only project that Mr. Yamamoto takes charge among other technical cooperation projects, JICA attaches special importance to this project and believes that it will be great value to both Vietnamese and Japanese stakeholders.

### **4. Presentation of Project Monitoring Sheet Version 3 by Mr. Shoichi Takada – Chief Advisor and Mr. Masafumi Yamauchi – Project Team Leader**

- Detailed explanation of the Progress of Activities in the Project carried out as at the end of September 2016 and the Planned Activities for future, based on the draft Project Design Matrix version 3.

### **5. Presentation of Output 4 by Mr. Mitsuhiro Narisawa – Deputy Team Leader and Expert for Output 4**

- 5.1. Detailed explanation of Evaluation Method on Engineering Capacity of Construction Contractor*
- 5.2. Detailed explanation of Improvement of Regulation Necessary on Qualifications for PMU*



## 6. Discussions

### 6.1. Mr. Pham Van Khanh – Director General of Construction Economics Department (CED):

- Regarding Output 3, as for now, the product of this Output - Guideline on Cost Estimation for Indirect Construction Contractor Works in Viet Nam is complete. CED and JICA Team are going to implement expense trend survey for indirect cost and overhead. CED is pleased that proposal for expansion of this Output to direct cost has been agreed. Only when both direct and indirect cost are studied and reviewed, this Output will bring out comprehensive outcomes.

- For the current situation in Viet Nam, the cost norm system is outdated, and CED makes hard for this system to be applied to make cost estimation following market mechanism. Thus, under MOC leaders' instructions, CED is planning to make request for another study on improving current system.

- Regarding PMU, for now, cost for PMU is stipulated in Decision 957. However, the cost is calculated basing on respective projects. Under the new Construction Law 2014, Professional PMU system is established. Thus, if possible, CED requests the Project Team to provide some information about cost and practices in Japan in regard to Professional PMU.

- Regarding Output 5, the two sides already agreed on the draft Guideline. Necessary activities will be implemented as planned.

+ One important thing regarding standard contract form, in Viet Nam, no fixed standard conditions of contract is existed. Thus, CED expects that the Project Team will assist CED in another study for developing standard conditions of contract.

- The support and cooperation from Japanese side is highly appreciated. It is expected that JICA Viet Nam Office will take the mentioned proposals into consideration.

### 6.2. Mr. Le Quang – Deputy Director General of State Authority for Construction Quality Inspection (SACQI):

- Regarding Output 1 and 2, the products of the two outputs (Standard Plan for Quality and Safety Management) are already complete. At the moments, additional activities are being carried out.

+ Regarding additional activities for Output 1 (Quality Management), all the contents are really relevant.

+ Regarding additional activities for Output 2 (Safety and Environment Management), more detailed discussion should be made for the new contents to be applicable with the new regulations. For more information, before, all the regulations relating to safety management are promulgated by the Ministry of Labours, Invalids and Social Affairs (MOLISA). However, after Law on Occupational Safety and Hygiene 2015 and Decree 45 on Labour Safety, SACQI is assigned some specific responsibilities on this matter. Thus, adjustments should be made for the final products which would be suitable with the new regulations.

- Regarding Contractor Work Performance Evaluation, MOC has issued a new regulation on construction quality awarding (Circular No 04/2016/TT-BXD) which may be a reference for this work.

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### *6.3. Mr. Nguyen Chi Hieu - Deputy Director General of Construction Activities Management Authority (CAMA):*

- CAMA is in charge of Output 4 (Engineering Capacity of Construction Contractors and PMUs) which focuses on two main contents: Capacity of PMUs and capacity of contractors.

+ Regarding capacity of PMUs, the two sides have already reached an agreement on the improvement of regulation on qualification for PMUs.

+ Regarding capacity of contractors, work performance evaluation of contractors is the most important content. Roadmap for the implementation of this work is agreed, including analysis of current system in Viet Nam and foreign practices. Besides, roadmap for the improvement of current regulations system has been built.

- Regarding trial of contractor work performance evaluation, with the assistance from SACQI, CAMA and JICA Team will conduct trial evaluation on a hospital construction project. In the coming time, CAMA would like to have SACQI's assistance in selecting two more projects and implementing trial work.

- Regarding financial criteria for evaluation, it will take more time and need thorough discussion on the selection of suitable financial criteria before practical usage.

### *6.4. Mr. Bui Pham Khanh – Deputy Minister of MOC*

- Regarding Project Document, for the official approval of the Project Document as soon as possible, International Cooperation Department (ICD) needs to cooperate closely with Planning – Finance Department to complete all procedures (including budget allocation) in October.

- Regarding additional activities of Output 1, 2 and 3, the two sides should continue detail discussion for the effective implementation of outputs. Also, it will be highly appreciated if JICA Team and JICA Viet Nam Office consider Vietnamese counterparts' requests.

- Regarding Output 4, MOC pays much attention to work performance evaluation and professional PMUs. Professional PMUs are very important to public project investments. Once again, MOC expects to have assistance from JICA Team in cost for PMU.

- It is suggested that the Project Team should have one more project for case study/site visit: Song Hau Thermal Power Plant in Hau Giang Province. Site visit to this project is not only useful for the current studying on Output 4 (PMU interview & trial work performance evaluation) but also for other outputs.

- Regarding to contract management, it is expected that the Project Team pays more attention to issues relating to defect liability & remedy and insurance.

- Regarding training and seminar, 2 day – training workshop program maybe too long as it is hard for participants to arrange time. The two sides should discuss more about the schedule.

### *6.5. Mr. Hiroshi Anzo – Senior Project Formulation Advisor, JICA Viet Nam Office*

- The contents of products of the five outputs should be presented in a format for clear understanding. For example, guideline contains many contents and to make it easy for the targeted stakeholders, the contents

## ANNEX I

may be categorized into groups: content that can be immediately accepted, content acceptable but require amendment of regulations, content recommended but not currently accepted (require further discussion).

- Regarding training/seminar, it is better if MOC considers to invite wider range of participants from MOT/DOT, MPI/DPI or private companies (contractors & consultants).

### *6.6. The Project Team's responses:*

- Regarding training/seminar, when the JICA expert for training workshop is coming to Hanoi (1 week later), JICA team would discuss with MOC ICD & AMC to finalize program by taking into consideration Deputy Minister's comments.

- Regarding Mr. Le Quang's request in Output 2, JICA team will discuss the matters in CPMU and try to accommodate requests from C/Ps.

- Regarding Output 3, under additional activity (To formulate guideline on the cost estimation for direct construction contractor work), sample cost norms (typical works) will be compared between Viet Nam and Japan and Guideline will include improvement of current cost norm in general.

+ JICA team will search cost of professional PMU in Japan and disclose it if finding appropriate data.

+ JICA team will make review and advices on draft standard conditions of contract, if and when CED prepares draft during CCQS project.

- Regarding Output 4, PMU matters (interview etc.) and trial work performance evaluation have been discussed mainly with CAMA so far. As CED is in charge of cost estimation and SACQI is practicing the awarding for project quality, JICA team will discuss details with relevant parties (including ICD) to visit Song Hau Thermal Power Plant project in Hau Giang Province.

### **7. Wrap-up and Conclusion by Mr. Kenichi Yamamoto**

- It is thought that Output 5 plays important role in this Project as products of the outputs in the end. Therefore, contents of the product should be properly clarified as mentioned above.

- It is hoped that the active and effective cooperation between the two sides will be maintained not only in this project but also in other projects in the future.

- JICA will do its best to provide necessary support to the Project Team and meet up with MOC side's expectations.

### **8. Wrap-up and Conclusion by Deputy Minister Bui Pham Khanh**

- All comments and requests by the participants are welcomed. MOC side will do as much as possible to cooperate with the JICA team and JICA Viet Nam Office.

**THIRD JOINT STEERING COMMITTEE MEETING**

**AGENDA**

Co-chaired by:

**Mr. Bui Pham Khanh, Deputy Minister of MOC**

**Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam**

Date: October 12, 2016

Time: 15:30 ~ 17:45

Venue: Room 252, MOC Building

Time	Activity	Presenter
15:30 ~ 15:35 (05 minutes)	Introduction	Mr. Pham Khanh Toan, Director General, International Cooperation Dept. (ICD)
15:35 ~ 15:40 (5 minutes)	MOC Leader's remarks	Mr. Bui Pham Khanh, Deputy Minister, MOC
15:40 ~ 15:45 (5 minutes)	JICA Leader's remarks	Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam
15:45 ~ 16:15 (30 minutes)	Presentation of Project Monitoring Sheet (including additional activities)	Mr. Shoichi Takada, Chief Advisor Mr. Masafumi Yamauchi, Project Team Leader
16:15 ~ 16:45 (30 minutes)	Presentation of Output 4 - Evaluation Method on Engineering Capacity of Construction Contractor - Improvement of Regulation Necessary on Qualifications for PMU	Mr. Mitsuhiro Narisawa, Deputy Team Leader and Expert for Output 4
16:45 ~ 17:40 (55 minutes)	Discussion	
17:40 ~ 17:45 (5 minutes)	Wrap-up and Conclusion	Mr. Bui Pham Khanh, Deputy Minister, MOC Mr. Kenichi Yamamoto, Deputy Chief Representative, JICA Office in Viet Nam

*Handouts:*

1. Monitoring sheets version 3 (summary version in power point)
2. Project monitoring sheets version 3 (full version in word)
3. Interim report III
4. Documents of Output 4

## LIST OF PARTICIPANTS – THIRD JSC MEETING

No.	FULL NAME	POSITION
<b>Vietnamese side</b>		
1.	Mr. Bui Pham Khanh	Deputy Minister
2.	Mr. Pham Khanh Toan	Director General, ICD
3.	Mr. Pham Van Khanh	Director General, CED
4.	Mr. Nguyen Chi Hieu	Deputy Director General, CAMA
5.	Mr. Le Quang	Deputy Director General, SACQI
6.	Mr. Tran Huu Ha	President, AMC
7.	Mr. Le Dong Thanh	Deputy Director General, Planning – Finance Department
8.	Ms. Nguyen Thi Bich Hue	Deputy Director General, ICD
9.	Mr. Nguyen Chien Thang	Senior Official, Ministry Office
10.	Ms. Do Nguyet Anh	Senior Official, ICD
11.	Ms. Nguyen Hien Anh	Official, ICD
12.	Mr. Nguyen Bac Thuy	Official, CED
13.	Mr. Nguyen Kim Dung	Official, CAMA
14.	Mr. Pham Hoang Viet	Official, CAMA
15.	Mr. Nguyen The Anh	Official, SACQI
16.	Mr. Nguyen Hong Linh	Official, SACQI
17.	Mr. Nguyen Van Anh	Construction Newspaper
18.	Mr. Bach Minh Tuan	Information Center, MOC
<b>Japanese side</b>		
1.	Mr. Kenichi Yamamoto	Deputy Chief Representative, JICA Vietnam Office
2.	Mr. Hiroshi Anzo	Senior Project Formulation Advisor, JICA Vietnam Office
3.	Mr. Nguyen Dinh Thao	Senior Program Officer, JICA Vietnam Office
4.	Mr. Shoichi Takada	Chief Advisor
5.	Mr. Masafumi Yamauchi	Project Team Leader
6.	Mr. Mitsuhiro Narisawa	Deputy Project Team Leader
7.	Mr. Akira Iwashita	Quality Management
8.	Mr. Hiroshi Shintani	Safety Management
9.	Ms. Junko Taguchi	Safety Management
10.	Mr. Seiichi Kusano	Cost Estimation
11.	Mr. Masateru Tochinaka	Training & PR
12.	Ms. Dao Lan Huong	Technical Assistant
13.	Mr. Le Quoc Anh	Technical Assistant
14.	Ms. Pham Phuong Thao	Secretary
15.	Ms. Pham Thi Hong Van	Secretary

MOC: Ministry of Construction

ICD: International Cooperation Department

CED: Construction Economics Department

SACQI: State Authority for Construction Quality Inspection

CAMA: Construction Activities Management Authorities

AMC: Academy of Managers for Construction and Cities



**MINUTES OF MEETING**

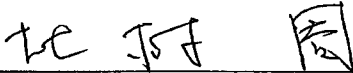
**THE FOURTH JOINT STEERING COMMITTEE MEETING (JSC) FOR  
THE PROJECT FOR CAPACITY ENHANCEMENT IN COST ESTIMATION,  
CONTRACT MANAGEMENT, QUALITY AND SAFETY IN  
CONSTRUCTION INVESTMENT PROJECTS (CCQS PROJECT)**

In accordance with the Record of Discussion (RD) signed on 27th January 2015 and following the success of the Third JSC Meeting, the Fourth JSC Meeting was convened on 12th April 2017, attended by Vietnamese and Japanese members.

In the Meeting, the Chief Advisor and the Project Team Leader presented the Monitoring Sheet version 4. Then the project experts presented briefly the draft products of Output 4 & 5. The meeting proceeded to the discussion session in which the Vietnamese counterparts made comments and additional requests. JICA side also expressed their ideas. Finally, Dr. Pham Khanh Toan – Director General of International Cooperation Department of MOC and Mr. Shu Kitamura – Senior Representative of JICA Viet Nam Office summarized the discussions and wrapped them up, the details of which are stipulated in the Summary of Discussion in Annex I.

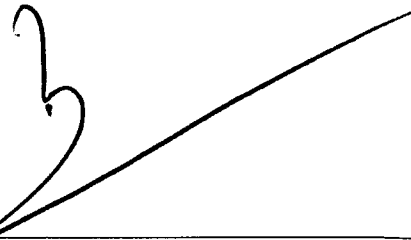
The Summary of Discussion, the Meeting Agenda and the List of Participants are attached as annex. It is hereby recorded that the Monitoring Sheet version 4 (Summary and Sheet I & II), the Documents of Output 4 & 5 and the Interim Report IV were delivered and accepted in the Meeting.

*Ha Noi, 12 April 2017*



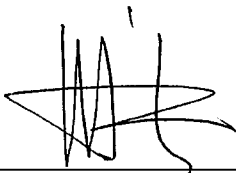
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Shu Kitamura  
Senior Representative  
Viet Nam Office  
Japan International Cooperation Agency (JICA)



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Bui Pham Khanh  
Deputy Minister  
Ministry of Construction  
The Socialist Republic of Viet Nam



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Masafumi Yamauchi  
Project Team Leader  
Project for Capacity Enhancement in Cost  
Estimation, Contract Management, Quality and  
Safety in Construction Investment Projects in  
Viet Nam (CCQS Project)



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Pham Khanh Toan  
Director General  
International Cooperation Department  
Ministry of Construction  
The Socialist Republic of Viet Nam

## SUMMARY OF DISCUSSION

### **1. Introduction by Mr. Pham Khanh Toan – Director General, International Cooperation Department (ICD), MOC**

- Brief introduction about the meeting and the participants.

### **2. Opening Remarks by JICA's leaders – Mr. Kenichi Yamamoto and Mr. Shu Kitamura – Senior Representative**

- The full participation of the counterparts for the 4<sup>th</sup> JSC meeting is highly appreciated.
- Mr. Yamamoto introduced the attendance of his successor – Mr. Shu Kitamura, the new Senior Representative of JICA Viet Nam Office.
- It is hoped that the Products of this Project will not only be helpful but also utilized in state budget projects as well as ODA loan projects and projects from other loan sources.
- It is also expected that the close cooperation of the two sides will be a great contribution to the smooth implementation of this Project.

### **3. Presentation of Project Monitoring Sheet Version 4 by Mr. Shoichi Takada – Chief Advisor and Mr. Masafumi Yamauchi – Project Team Leader**

- Detailed explanation of the Progress of Activities in the Project carried out as at the end of March 2017 and the Planned Activities for near future.

### **4. Presentation of draft products of Output 4 & 5**

*4.1. Detailed explanation of Selection Mechanism of Construction Contractor by Mr. Mitsuhiro Narisawa, Deputy Project Team Leader and Expert for Output 4*

*4.2. Detailed explanation of Guideline on Contract Management and Contract Alteration of Construction Contractor Works by Mr. Masafumi Yamauchi, Project Team Leader and Expert for Output 5*

### **5. Discussion**

*5.1. Mr. Le Quang – Deputy Director General of State Authority for Construction Quality Inspection (SACQI):*

- SACQI is in charge of Output 1 (Quality Management) & Output 2 (Safety Management).
- Regarding Output 1, the Standard Plan for Quality Management has been formulated and is being developed well. In 2017, MOC has no plan to revise circular relating to quality management so products of this Output will be incorporated in regulations later. In near future, outcomes of this Output will be utilized in trainings for government officials at central and local levels as well as other stakeholders.
- Regarding Output 2, safety in construction is attached special importance in Viet Nam. As the Standard Plan for Safety Management (SPSM) made under CCQS Project is very useful, SACQI is going to incorporate some contents from SPSM into the new circular on safety management in construction works. The draft circular has been submitted to Deputy Minister Mr. Le Quang Hung and is being under review and consideration.



## ANNEX I

- The Additional Activities for Output 1 & 2 are being carried out effectively, thanks to the active and close cooperation of the two sides. It is expected that the results of the Additional Activities will also be contributed to the new regulations in the near future.

- In all, the products of Output 1 & 2 will be a great help to the improvement of the current legal system.

- Regarding the Project Team's request to select one more case study project (road/bridge project) to conduct trial evaluation on work performance of construction contractor, SACQI will choose a suitable project and contact project owner and inform the Project Team soon.

### *5.2. Dr. Nguyen Chi Hieu - Deputy Director General of Construction Activities Management Authority (CAMA):*

- CAMA is in charge of Output 4 (Engineering Capacity of Construction Contractors).

- Up to now, the two sides have been cooperated closely and effectively. The suggestions and recommendations from the Project Team are highly appreciated.

- It is highly expected that the products of Output 4 will be a great contribution to the revision of the current regulations and be incorporated into the new decree/circular in the near future.

### *5.3. Dr. Pham Van Khanh - Director General of Construction Economics Department (CED):*

- CED is in charge of Output 3 (Cost Estimation) and Output 5 (Contract Management).

- It can be assured that the research results and the products of these Outputs will contribute greatly to the comprehensive improvement of the current cost estimation and management system as well as contract management system.

- Regarding Output 5, the contents of the Guideline on Contract Management and Contract Alteration have been submitted to the Minister of Construction. CED is planning to incorporate these contents into Decree 37 in 2018. Moreover, the long-term recommendations from the Project Team will be considered to be incorporated into Law on Construction in 2020.

- Regarding Output 3 (Cost estimation for indirect cost), the expense trend survey form for indirect cost has been sent to the PMUs and contractors for them to fill in necessary information on expense trend survey. In the future, after collecting all the data, the analysis work will be implemented.

- Regarding Additional Activities of Output 3 (Cost estimation for direct cost), the two sides have worked actively to identify the differences between Viet Nam's system and international practices. CED has reported the results to MOC's leaders. It is also planned that the products of original and additional activities will be incorporated into Decree 32 on cost management and other relevant circulars.

- Thanks to the positive outcomes of the Project, CED has been assigned a new state budget project for the improvement of the construction norm and price system, which aims at comprehensive cost management in correspondence with Viet Nam practical conditions and international standards. In this new project, all the recommendations from the Project Team under CCQS Project will be considered to be incorporated into. It is highly expected that CED will have JICA's technical assistance in this new state budget project so that the products of CCQS Project will be utilized to their best with the new project for the comprehensive improvement.

## ANNEX I

### *5.4. Mr. Nguyen Anh Dung – Vice President of AMC:*

- AMC is in charge of training/seminar of CCQS Project. It is hoped that AMC officials can be involved more in the Project.

- In Viet Nam, trainings for officials totally base on regulations. Considering this situation, it is very good if all the products of the Project are incorporated into regulations. Then the outcomes of the Project will be disseminated more easily.

### *5.5. Mr. Hiroshi Anzo – Senior Project Formulation Advisor, JICA Viet Nam Office:*

- All the comments of the counterparts are highly welcomed.

- JICA side really expects that the outcomes of the Project are realized and utilized in Viet Nam's legal system. Thus, JICA side and MOC side will have more detailed discussion to build a roadmap for the effective legalization of the Project outcomes.

- JICA side pays special attention to the cost, norm and price system in Viet Nam. JICA understands MOC's wishes and will do necessary work to assist MOC side as much as possible.

### *5.6. Mr. Kenichi Yamamoto – Senior Representative, JICA Viet Nam Office:*

- It is good that some products from Outputs are or will be legalized in Viet Nam and it is also all right that some products are utilized in trainings for government officials in central and local levels as well as other stakeholders prior to legalization.

### *5.7. Mr. Nguyen Dinh Thao – Senior Program Officer, JICA Viet Nam Office:*

- It is suggested that the recommendations from the Project Team will be presented to all the attendants of the coming training workshop so they can fully understand contract management activities and utilize that knowledge in bidding documents to avoid negotiations at the time of contract finalization.

### *5.8. Mr. Takuya Kudo – Second Secretary, Embassy of Japan in Viet Nam:*

- The Embassy of Japan will do as much as we could to assist all the stakeholders in this Project.

### *5.9. Mr. Masafumi Yamauchi – Project Team Leader:*

- List of PMUs prepared by JICA Viet Nam Office for the coming training workshop was provided to MOC side. If MOC needs any assistance from JICA in this regard, ICD staffs can contact Mr. Thao of JICA Viet Nam office directly for help.

## **6. Wrap-up and Conclusion by Mr. Pham Khanh Toan, Director General of International Cooperation Department, MOC**

- It is agreed that during the last six months, the study has been implemented effectively as planned.

- It is also agreed that it is necessary to legalize the outcomes of the Project.

- It is hoped that the active and effective cooperation between the two sides will be maintained in the future.

**7. Wrap-up and Conclusion by Mr. Shu Kitamura, Senior Representative of JICA Viet Nam Office**

- The Project is more than half way through. It is hoped that the two sides will continue such close and active cooperation for the effective implementation of the Project.

- JICA side will do its best to assist the counterparts and to meet up with MOC's expectations.

**FOURTH JOINT STEERING COMMITTEE MEETING****AGENDA**

Co-chaired by:

**Mr. Pham Khanh Toan, Director General, International Cooperation Department, MOC****Mr. Kenichi Yamamoto/Mr. Shu KITAMURA, Deputy Chief Representative,****JICA Office in Viet Nam**

Date: April 12, 2017

Time: 15:00 ~ 17:15

Venue: Room 252, MOC Building

Time	Activity	Presenter
15:00 ~ 15:05 (05 minutes)	Introduction	Dr. Pham Khanh Toan, Director General, International Cooperation Dept. (ICD), MOC
15:05 ~ 15:10 (5 minutes)	JICA Leader's remarks	Mr. Kenichi Yamamoto/Mr. Shu Kitamura, Chief Representative, JICA Office in Viet Nam
15:10 ~ 15:40 (30 minutes)	Presentation of Project Monitoring Sheet	Mr. Shoichi Takada, Chief Advisor Mr. Masafumi Yamauchi, Project Team Leader
15:40 ~ 16:10 (30 minutes)	Presentation of Output 4 (Selection Mechanism) Presentation of Output 5 (GL for Contract Management)	Mr. Mitsuhiro Narisawa, Deputy Team Leader and Expert for Output 4 Mr. Masafumi Yamauchi, JICA Project Team Leader and Expert for Output 5
16:10 ~ 17:05 (55 minutes)	Discussion	
17:05 ~ 17:15 (10 minutes)	Wrap-up and Conclusion	Dr. Pham Khanh Toan, Director General, International Cooperation Dept. (ICD), MOC Mr. Shu Kitamura, Senior Representative, JICA Office in Viet Nam

*Handouts:*

1. Monitoring sheets version 4 (summary version in power point)
2. Project monitoring sheets version 4 (full version in word)
3. Interim report IV
4. Project Outputs (Selection Mechanism of Construction Contractor + Guideline on Contract Management and Contract Alteration of Construction Contractor Works)

## LIST OF PARTICIPANTS – THE FOURTH JSC MEETING

No.	FULL NAME	POSITION
<b>Vietnamese side</b>		
1.	Dr. Pham Khanh Toan	Director General, ICD
2.	Dr. Pham Van Khanh	Director General, CED
3.	Dr. Nguyen Chi Hieu	Deputy Director General, CAMA
4.	Mr. Le Quang	Deputy Director General, SACQI
5.	Dr. Nguyen Anh Dung	Vice President, AMC
6.	Ms. Truong Thi Thu Thanh	Deputy Director General, CED
7.	Mr. Nguyen Chien Thang	Senior Official, Ministry Office
8.	Ms. Do Nguyet Anh	Senior Official, ICD
9.	Ms. Nguyen Thi Hang	Official, Planning – Finance Department
10.	Ms. Nguyen Hien Anh	Official, ICD
11.	Mr. Le Ngoc Quy	Official, SACQI
12.	Mr. Nguyen Hong Linh	Official, SACQI
13.	Mr. Pham Hoang Viet	Official, CAMA
14.	Mr. Doan Manh Hung	Official, CAMA
15.	Ms. Cao Thanh Nga	Construction Newspaper
16.	Mr. Bach Minh Tuan	Information Center, MOC
<b>Japanese side</b>		
1.	Mr. Kenichi Yamamoto	Senior Representative, JICA Viet Nam Office
2.	Mr. Shu Kitamura	Senior Representative, JICA Viet Nam Office
3.	Mr. Hiroshi Anzo	Senior Project Formulation Advisor, JICA Vietnam Office
4.	Mr. Takuya Kudo	Second Secretary, Embassy of Japan in Viet Nam
5.	Mr. Nguyen Dinh Thao	Senior Program Officer, JICA Viet Nam Office
6.	Mr. Shoichi Takada	Chief Advisor
7.	Mr. Masafumi Yamauchi	Project Team Leader
8.	Mr. Mitsuhiro Narisawa	Deputy Project Team Leader
9.	Mr. Seiichi Kusano	Cost Estimation
10.	Mr. Masateru Tochinaka	Cost Estimation, Training & Public Relation
11.	Ms. Dao Lan Huong	Technical Assistant
12.	Mr. Le Quoc Anh	Technical Assistant
13.	Ms. Pham Phuong Thao	Secretary
14.	Ms. Pham Thi Hong Van	Secretary

MOC: Ministry of Construction

ICD: International Cooperation Department

CED: Construction Economics Department

SACQI: State Authority for Construction Quality Inspection

CAMA: Construction Activities Management Authorities

AMC: Academy of Managers for Construction and Cities



## MINUTES OF MEETING

### THE FIFTH JOINT STEERING COMMITTEE MEETING (JSC) FOR

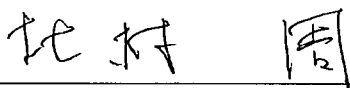
### THE PROJECT FOR CAPACITY ENHANCEMENT IN COST ESTIMATION, CONTRACT MANAGEMENT, QUALITY AND SAFETY IN CONSTRUCTION INVESTMENT PROJECTS (CCQS PROJECT)

In accordance with the Record of Discussion (RD) signed on 27th January 2015 and following the success of the Fourth JSC Meeting, the Fifth JSC Meeting was convened on 18th October 2017, attended by Vietnamese and Japanese members.

In the Meeting, the Chief Advisor and the Project Team Leader presented the Monitoring Sheet version 5. Then the Project experts presented the draft products of Output 1, 2 & 3. As the Project enters final stage, the Vietnamese counterparts presented their plans on future schedule for Output Documents. JICA side also expressed their ideas. Finally, Mr. Bui Pham Khanh – Deputy Minister of the Ministry of Construction (MOC) and Mr. Shu Kitamura – Senior Representative of JICA Viet Nam Office summarized the discussions and wrapped them up, the details of which are stipulated in the Summary of Discussion in Annex I.

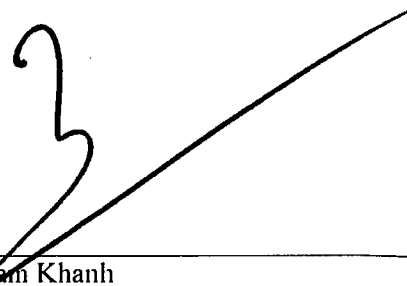
The Summary of Discussion, the Meeting Agenda and the List of Participants are attached as annex. It is hereby recorded that the Monitoring Sheet version 5 (Summary and Sheet I & II), the Documents of Output 1, 2 & 3 and the Interim Report V were delivered and accepted in the Meeting.

*Ha Noi, 18 October 2017*



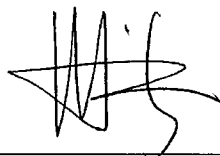
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Shu Kitamura  
Senior Representative  
Viet Nam Office  
Japan International Cooperation Agency (JICA)



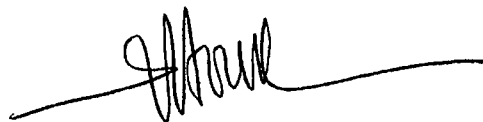
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Bui Pham Khanh  
Deputy Minister  
Ministry of Construction  
The Socialist Republic of Viet Nam



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Masafumi Yamauchi  
Project Team Leader  
Project for Capacity Enhancement in Cost  
Estimation, Contract Management, Quality and  
Safety in Construction Investment Projects in  
Viet Nam (CCQS Project)



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Pham Khanh Toan  
Director General  
International Cooperation Department  
Ministry of Construction  
The Socialist Republic of Viet Nam

## SUMMARY OF DISCUSSION

### **1. Introduction by Mr. Pham Khanh Toan – Director General, International Cooperation Department (ICD), MOC**

- Brief introduction about the meeting and the participants.

### **2. Opening Remarks by Mr. Bui Pham Khanh - Deputy Minister, MOC**

- The Vietnamese side highly appreciates the cooperation from JICA side as well as the Project Team during the Project implementation.

- The results of the close cooperation of the two sides are Output Documents, among which Documents for Output 1 (Quality Management), Output 2 (Safety Management) and Output 3 (Cost Estimation) will be presented in this meeting.

- All these Output Documents contribute not only to the making, reviewing and issuing regulations in construction but also to the Government's decision to establish State Authority for Construction Economics (upgraded from Construction Economics Department).

- Up to now, six training workshops have been conducted in Viet Nam and two trainings been conducted in Japan, which are highly appreciated by the Minister of Construction. The participants and the trainees gained much knowledge in the construction field during the training workshops in Viet Nam and the trainings in Japan respectively.

- For the effective utilization of the Output Documents, post-project training workshops will play a very important role. Thus, two sides also need to discuss and work on this matter thoroughly.

### **3. Opening Remarks Mr. Shu Kitamura - Senior Representative, JICA Viet Nam Office**

- JICA side wishes to express their appreciation and positive attitude to the Vietnamese counterparts, especially Deputy Minister Bui Pham Khanh, who have actively assisted and cooperated with the Japanese side in CCQS Project.

- It can be seen that the Project is being carried out as scheduled, and it is only about six months to the completion of the Project. At this stage, both sides need to be reminded one important thing: how to utilize the products successfully and how to legalize these products. JICA wishes the products are practical and will be contributed to the improvement of regulations in Viet Nam.

- The effective utilization of the Project's products is an important factor when JICA considers the new project proposed by MOC.

- JICA always welcomes discussion and comments from all sides for the smooth implementation of the Project.

### **3. Presentation of Project Monitoring Sheet Version 5 by Mr. Shoichi Takada – Chief Advisor and Mr. Masafumi Yamauchi – Project Team Leader**

- Detailed explanation of the Progress of Activities in the Project carried out as at the end of September 2017 and the Planned Activities for future.



#### **4. Presentation of Draft Documents of Output 1, 2 & 3**

*4.1. Detailed explanation of Guideline for Quality Supervision and Inspection for State Authorities and POs/PMUs by Mr. Masafumi Yamauchi, Project Team Leader and Expert for Output 1*

*4.2. Detailed explanation of Standard Plan for Environment Management & Guideline for Safety and Environmental Inspection for State Authorities and POs/PMUs by Mr. Mitsuhiro Narisawa, Deputy Project Team Leader*

*4.3. Detailed explanation of Guideline for Cost Estimation by Mr. Seiichi Kusano and Mr. Masateru Tochinaka, Expert for Output 3*

#### **5. Future schedule for Output Documents by Vietnamese counterparts**

*5.1. Future schedule for Output 1 & 2 by Mr. Ngo Lam – Deputy Director General of State Authority for Construction Quality Inspection (SACQI):*

- Documents for Output 1 & 2 are the followings:

- Output 1: Standard Plan for Quality Management (SPQM) and Guideline for Quality Supervision and Inspection (GLQI).

- Output 2: Standard Plan for Safety Management (SPSM), Standard Plan for Safety and Environment Management (SPSEM), and Guideline for Safety and Environmental Inspection (GLSEI).

- In general, the Output Documents will be incorporated into Regulations (revision of Law on Construction, Law on Occupational Safety and Health, Draft Circular on Environment Protection in Construction, etc.). Specifically, these documents were incorporated into Circular 26/2016/TT-BXD and Circular 04/2017/TT-BXD. In near future (2019), SACQI will consider to incorporate SPQM and GLQI into Decree 46/2015 on Quality Management.

- The Output Documents were disseminated to MOC officials and related organizations during Dialogue with Construction Industries and Training Workshops in 2016.

- The Output Documents will also be used as reference for SACQI's Internal Inspection in approval and inspection procedures.

- From 2018 to 2020, SACQI will choose some projects to apply these Output Documents on a trial basis.

- Through successful implementation of the Outputs, occupational health & safety mission is assigned to MOC (before it was under the Ministry of Labours, Invalids and Social Affairs authority).

*5.2. Future schedule for Output 3 & 5 by Dr. Pham Van Khanh - Director General of State Authority for Construction Economics (SACE):*

- Documents for Output 3 & 5 are these followings:

- Output 3: Guideline on Cost Estimation for Indirect Construction Cost (GLCE -1), Guideline on Cost Estimation for Construction Cost (GLCE).

- Output 5: Guideline on Contract Management and Contract Alteration (GLCM).

- In general, the Output Documents will be incorporated into construction regulations (Adjustment and Amendment of the Law on Construction). Specifically, GLCE and GLCE-1 is contributed to the amendment and revision of Circular 5 & 6/2016/TT-BXD, Degree 32/2015; GLCM is incorporated into Decree 37/2015, Circular 7 to 9/2016/TT-BXD.

- The Documents were also disseminated to MOC officials and related organizations through Dialogue with Construction Industries and Training Workshops in 2016 and 2017.

- From the Documents of the two Outputs, SACE is assigned to set up a new domestic project for Improvement of Construction Norm and Price System. It has been submitted to Government Office and is receiving approval from the related organizations.

*5.3. Future schedule for Output 4 by Dr. Nguyen Chi Hieu – Deputy Director General of Construction Activities Management Authorities (CAMA):*

- This Output focuses on evaluation of construction contractor engineering capacity, engineer qualification system and construction contractor work performance evaluation system.

- The Output Documents are utilized in the revision of regulations like Decree 59/2015, Circular 17/2016/TT-BXD, Circular on Awarding for high quality construction projects, etc. In future, they will be incorporated in the Adjustment and Amendment of Construction Law.

- Dialogues and training workshops for Output 4 were held in 2016 and 2017. All the comments from the participants were collected and incorporated into the Output Documents.

- Especially, three trials of work performance evaluation were conducted. The score was used as reference for modifications in future implementation.

- In the coming time, it is highly appreciated that the Project Team continues to cooperate closely with CAMA in the completion of the Output Documents.

*5.4. Post – project training workshops by Mr. Nguyen Anh Dung – Vice President of Academy of Managers for Construction and Cities (AMC):*

- Until now, together with the Project Team, JICA Viet Nam Office and MOC related departments, AMC has taken part in the organization of training workshops in 2016 and first half of 2017. Thanks to the close cooperation from all sides, all the training workshops were complete very successfully.

- For the post project training workshops in 2018 to be successfully carried out, it is requested that the experts in CCQS Project may join and assist.

- It is also expected that Output Documents will be incorporated in regulations. If so, participants for training workshops will be obliged to join, making it easier to arrange trainings.

## **6. Discussion**

### *6.1. Mr. Shu Kitamura, Senior Representative, JICA Viet Nam Office:*

- Regarding the roadmaps for the Project Outputs, JICA side understands and appreciates.
- Regarding cost estimation, in a number of ODA projects, for example, a project on wastewater treatment for Hanoi city, the project owner and the selected bidder have had many difficulties in dealing with bid price which exceeds the estimated price approved in the bidding plan by the Vietnamese side. JICA understands this issue is related to the outdated method of preparing cost estimation. In order for JICA to consider the 2<sup>nd</sup> phase project, it should be necessary to incorporate a component to review and update cost estimation system.

## **7. Wrap-up and Conclusion by Mr. Bui Pham Khanh, Deputy Minister, MOC**

- It can be said that CCQS Project enters completion stage and the Output Documents of the Project are being utilized well. It is no doubt that those are very useful for all stakeholders in construction.
- Regarding schedule for training workshops after the Project, MOC side is making plan to disseminate the Output Documents fully and effectively. Budget allocation for future trainings has nearly been done.
- There is one important thing the two sides need to discuss about. According to the Record of Discussion (RD), the Project period is from March 2015 to March 2018. However, as the Project Document was approved later than expected in Viet Nam, that period (for Vietnamese side) lasts from January 2016 to December 2018. It means there is a 9-month-gap. For this situation, MOC wishes to have JICA's assistance in resolving the 9 month gap of the CCQS Project.
- Regarding the new technical cooperation project proposed by MOC on cost norm system, it is hoped that MOC will have JICA's support in this matter. MOC believes that cost estimation system will be improved with the new technical cooperation project and provide positive impact on cost estimation on ODA projects.
- MOC highly appreciates the cooperation from JICA side and the Project Team in this Project and hopes this close cooperation will continue in the future.

## **8. Wrap-up and Conclusion by Mr. Shu Kitamura, Senior Representative, JICA Viet Nam Office**

- Regarding the 9 month difference in the Project schedule, JICA side will have internal discussion and will inform MOC side later.
- JICA hopes that the Output Documents of the Project will contribute to the revision of current regulations, making it practical with current market conditions as well as international standard.

## FIFTH JOINT STEERING COMMITTEE MEETING

## AGENDA

Co-chaired by:

Mr. Bui Pham Khanh, Deputy Minister, MOC

Mr. Shu KITAMURA, Deputy Chief Representative, JICA Office in Viet Nam

Date: October 18, 2017

Time: 15:35 ~ 18:20

Venue: Meeting room No. 2, 4<sup>th</sup> floor, MOC Building

Time	Activity	Presenter
15:35 – 15:40 (5 min.)	Introduction	Dr. Pham Khanh Toan, Director General, International Cooperation Dept. (ICD), MOC
15:40 – 15:50 (10 min.)	MOC Leader's remarks	Mr. Bui Pham Khanh, Deputy Minister, MOC
15:50 – 16:00 (10 min.)	JICA Leader's remarks	Mr. Shu Kitamura, Senior Representative, JICA Office in Viet Nam
16:00 – 16:25 (25 min.)	Presentation of Project Monitoring Sheet	Mr. Shoichi Takada, Project Chief Advisor Mr. Masafumi Yamauchi, Project Team Leader
16:25 – 17:10 (45 min.)	Presentation of Output 1 (GL for Quality Inspection) Presentation of Output 2 (Standard Plan for Environment Management & GL for Safety & Environmental Inspection) Presentation of Output 3 (GL for Cost Estimation)	Mr. Masafumi Yamauchi, Project Team Leader & JICA Expert for Output 1 Mr. Mitsuhiro Narisawa, Deputy Project Team Leader Mr. Seiichi Kusano / Mr. Masateru Tochinaka, JICA Experts for Output 3
17:10 – 17:45 (35 min.)	Future schedule for Output Documents (Output 1 to 5)	DDG of SACQI for Output 1 & 2 DG of SACE for Output 3 & 5 DDG of CAMA for Output 4
17:45 – 18:00 (15 min.)	Discussion	
18:00 – 18:20 (20 min.)	Wrap-up and Conclusion	Mr. Bui Pham Khanh, Deputy Minister, MOC Mr. Shu Kitamura, Senior Representative, JICA Office in Viet Nam

*Handouts:*

1. Monitoring Sheets version 5 (summary version in power point)
2. Project Monitoring Sheets version 5 (full version)
3. Interim report V
4. Project Outputs (Guideline for Quality Supervision and Inspection – GLQI; Standard Plan for Safety and Environment Management – SPSEM; Guideline for Safety and Environmental Inspection – GLSEI; Guideline on Cost Estimation- GLCE)

## LIST OF PARTICIPANTS – THE FIFTH JSC MEETING

No.	FULL NAME	POSITION
<b>Vietnamese side</b>		
1.	Mr. Bui Pham Khanh	Deputy Minister
2.	Dr. Pham Khanh Toan	Director General, ICD
3.	Dr. Pham Van Khanh	Director General, SACE
4.	Mr. Ngo Lam	Deputy Director General, SACQI
5.	Dr. Nguyen Chi Hieu	Deputy Director General, CAMA
6.	Dr. Nguyen Anh Dung	Vice President, AMC
7.	Ms. Tran Thi Luu	Deputy Director General, Planning – Finance Department
8.	Ms. Truong Thi Thu Thanh	Deputy Director General, SACE
9.	Ms. Nguyen Thi Bich Hue	Deputy Director General, ICD
10.	Mr. Nguyen Chien Thang	Senior Official, Ministry Office
11.	Ms. Do Nguyet Anh	Senior Official, ICD
12.	Mr. Doan Manh Hung	Chief of Office, CAMA
13.	Ms. Nguyen Hien Anh	Official, ICD
14.	Mr. Bui Thai Binh	Official, SACE
15.	Mr. Nguyen Hong Linh	Official, SACQI
16.	Mr. Bach Minh Tuan	Information Center, MOC
<b>Japanese side</b>		
1.	Mr. Shu Kitamura	Senior Representative, JICA Viet Nam Office
2.	Mr. Hiroshi Anzo	Senior Project Formulation Advisor, JICA Vietnam Office
3.	Mr. Nguyen Dinh Thao	Senior Program Officer, JICA Viet Nam Office
4.	Ms. Dao To Cam	Program Officer, JICA Viet Nam Office
5.	Mr. Shoichi Takada	Chief Advisor
6.	Mr. Masafumi Yamauchi	Project Team Leader
7.	Mr. Mitsuhiro Narisawa	Deputy Project Team Leader
8.	Mr. Seiichi Kusano	Cost Estimation
9.	Mr. Masateru Tochinaka	Cost Estimation, Training & Public Relation
10.	Mr. Ken Nishino	Construction Contractor Grading System
11.	Ms. Dao Lan Huong	Technical Assistant
12.	Mr. Le Quoc Anh	Technical Assistant
13.	Ms. Pham Phuong Thao	Secretary
14.	Ms. Pham Thi Hong Van	Secretary

MOC: Ministry of Construction

ICD: International Cooperation Department

SACE: State Authority for Construction Economics

SACQI: State Authority for Construction Quality Inspection

CAMA: Construction Activities Management Authorities

AMC: Academy of Managers for Construction and Cities

