

**J1-Appendix 3: Record and Relevant Material on Third Country  
Technical Exchanges**



### Summary List of Technical Exchange Visits CESCOR

Seminar	Objectives	Results
<p>1<sup>st</sup> Visit</p> <p>24 October 2017 (Tue) - 28 October 2017 (Sat) Total 5days</p>	<ul style="list-style-type: none"> <li>• To understand EIA System in Myanmar through the discussion with Ministry of Natural Resources and Environmental Conservation in Myanmar and JICA's EIA Project.</li> <li>• To exchange ideas or experiences on EIA in public infrastructure sector with Ministry of Construction in Myanmar.</li> <li>• To find out the challenges on EIA issues in Myanmar by site visit.</li> </ul>	<ul style="list-style-type: none"> <li>• More technical capacity development for the officials of the Project Owner (Project Proponent), who is in charge of the EIA/EMP through the On the Job Training (OJT), is recommended with the budget.</li> <li>• Capacity development and technical training on EIA or EMP associated to public works and transport for the designated office or division.</li> <li>• It is proposed that the Environmental Social Office (ESO), Department of Planning should be included in each PMU to carry out the EIA or EMP related official works associated to public works and transport project.</li> </ul>
<p>2<sup>nd</sup> Visit</p> <p>26-28 September 2018 (in Cambodia) 22-26 October 2018</p>	<ul style="list-style-type: none"> <li>• To Share knowledge and lesson learned from Laos and Thailand.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge and lesson learned from Laos and Thailand were shared and discussed among the participants.</li> <li>• Participants visited each other in respective countries to have a look at the management methods.</li> </ul>
<p>3<sup>rd</sup> Visit</p> <p>29 April - 2 May 2019</p>	<ul style="list-style-type: none"> <li>• To attend 39th Annual Conference of the International Association for Impact Assessment in Brisbane, Australia.</li> <li>• To Present a paper and poster which introducing the Project.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge and lesson learned from related experts were shared and discussed among the participants.</li> <li>• Participants visited to the other paper/poster session to have a look at the latest impact assessment methods.</li> </ul>



Project for Capacity Enhancement on Environmental and Social Considerations  
in Implementing Agency in Road Sector in the Kingdom of Cambodia

# 1<sup>st</sup> Technical Exchange in the Third Country

November 2017

CTI Engineering International Co., Ltd.  
Environment and Social Infrastructure Consultant Co., Ltd.  
Hanshin Expressway Co., Ltd.



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## 1. Purposes of the Technical Exchange

- To understand EIA System in Myanmar through the discussion with Ministry of Natural Resources and Environmental Conservation in Myanmar and JICA's EIA Project
- To exchange ideas or experiences on EIA in public infrastructure sector with Ministry of Construction in Myanmar
- To find out the challenges on EIA issues in Myanmar by site visit.

## 2. Participants from Cambodia side

Organization	Name	Position
Ministry of Public Works and Transport (MPWT)	Mr. PROK Novida	Director, DoP
	Mr. DUN Vandyreagan	Chief Officer, ICD
	Mr. PEANG Samoeun	Deputy Chief Officer, ICD
	Mr. MANH Vutha	Deputy Chief Officer, ICD
	Mr. SREY Vireak	Officer, DoP
	Mr. BOUR ChhayYa	Officer, DoP
Ministry of Environment (MoE)	Mr. YAV Net	Officer, EIA Department
	Ms. MEN Uonmalin	Officer, EIA Department
JICA Project Team	Mr. ITO Tsuyoshi	ESC / EIA / EMP
	Ms. NAKAYAMA Makiko	Training Plan and Implementation 1
	Mr. PENH Socheat	Technical Assistant

Notes:

DoP = Department of Planning

ESC = Environmental and Social Considerations

ICD = International Cooperation Department

EMP = Environmental Management Plan

## 3. Period and Schedule

24 October 2017 (Tue) – 28 October 2017 (Sat) \*Total 5days

No.	Date		Schedule	Stay
1	24	Tue	(PM) Leave from Phnom Penh to Nay Pyi Taw	NPT
2	25	Wed	(08:30-13:00) Technical Exchange Seminar (14:30-16:30) Meeting with Ministry of Natural Resources and Environmental Conservation (MONREC)	NPT
3	26	Thu	(10:00-11:00) Meeting with Ministry of Construction (MOC) (15:00-17:00) Internal wrap-up meeting	NPT
4	27	Fri	(AM) Move from Nay Pyi Taw to Yangon (16:00-17:00) Construction site visit at New Thaketa Bridge	YGN
5	28	Sat	(08:30-09:00) Internal closing meeting (PM) Leave from Yangon to Phnom Penh	-





(2) Agenda

Date: 25 October 2017 (Wed) Time: 08:30 – 13:00 Venue: Park Royal Nay Pyi Taw

<b>Time</b>	<b>Topic</b>	<b>Speaker / Presenter, Participants</b>
8:30– 9:00	Registration of Participants	All Participants
9:00– 9:10	Opening Remarks	Mr. Than Aye Deputy Director General, Environmental Conservation Department (ECD), Ministry of Natural Resources and Environmental Conservation (MONREC) in Myanmar
9:10-9:15	Brief Explanation of Seminar Objectives and the Topics	Mr. Prok Novida, Director of Department of Planning, Ministry of Public Works and Transportation (MPWT) in Cambodia
9:15-9:45	Presentation on “Project for capacity Development in Basic Water Environment Management and EIA System in Myanmar”	Dr. Kanji Usui, JICA Expert of the Project in Myanmar
9:45-10:15	Presentation on Overall of “Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR) ”	Mr. Tsuyoshi Ito, JICA Expert of the Project in Cambodia
10:15-10:30	<i>Coffee Break</i>	<i>All Participants</i>
10:30-11:00	Presentation on “EIA System and EIA Implementation Issues of ECD, MONREC in Myanmar”	Dr. San Oo, Director of NRC and EIA Division, ECD, MONREC in Myanmar
11:00-11:30	Presentation on “Tasks and the Implementation Issues of MPWT for EIA Road Sector in Cambodia”	Mr. Srey Vireak, Counter Part (Department of Planning, MPWT in Cambodia)
11:30-11:45	Presentation on “ESIA Consideration”	Mr. Kyaw Kaung Cho, Chief Engineer, Department of Bridge, MOC in Myanmar
11:45-12:00	Presentation on “Infrastructure Development Project in Thilawa area Phase II, Access Road Project”	Ms. Ei Ei Myo, Deputy Director, Department of Highway, MOC in Myanmar
12:00-12:10	Closing Remarks	Dr. San Oo, Director of NRC and EIA Division, ECD, MONREC in Myanmar
12:10-13:00	<i>Luncheon</i>	<i>All Participants</i>

### (3) Minutes of Discussion

#### **Opening remarks**

**(by Mr. Than Aye, Deputy Director General, Environmental Conservation Department)**

- Environment and social impacts caused by road infrastructure development are very important and it should be included in the project design and management in order to minimize the negative impacts.
- Purpose of technical exchange is to gain technical experiences between Cambodia and Myanmar, particularly in road infrastructure development. I would like to thank JICA for support so far including technical supports.
- Hope that the seminar will have fruitful results and looking forward to the collaboration in the future between Cambodia and Myanmar through JICA support.

#### **Brief explanation of Seminar objectives and the topics**

**(by Mr. Prok Novida, Director of Department of Planning, MPWT)**

- We, Cambodian team, are happy to be here, especially in the peaceful city. Please let me inform the purpose of this technical exchange trip: to understand EIA System in Myanmar through the discussion with Ministry of Natural Resources and Environmental Conservation in Myanmar and JICA's EIA Project; to exchange ideas or experiences in EIA Public Infrastructure Sector with Ministry of Construction in Myanmar; and to find out the challenges on EIA issues in Myanmar by site visit.
- Regarding this morning technical exchange seminar, it will mainly focus on the EIA legal frameworks and implementation in Myanmar and Cambodia, especially practical experiences in Road Infrastructure development and water resources management.
- Hope that we will have fruitful discussion and gain some valued learning experiences from each other.
- Once again, I would like to thank MONREC in Myanmar and JICA so much for great cooperation and supports.

#### **Presentation on “the project for capacity development in basic water environment management and EIA system in Myanmar”**

**(by Dr. Kanji Usui, JICA Expert of the Project in ECD, Myanmar)**

Main points of the presentation are summarized as below:

- EIA capacity development
- Short, middle and long-term goal of EIA capacity development
- Roadmap of EIA capacity development

- A. Support for law development
- B. Capacity building (curriculum of the training modules and features of the training)
- C. Supporting tools (e-manual, coverage of e-manual, mechanism of e-manual and tracking system)
- D. Socialization
- E. Relationship-building

**Questions and answers:**

Mr. Chay Ya: According to slide number 5, what kind of methods for supporting law development? Or How can JICA project support for law development at ECD?

Dr. Usui: I am in charge of EIA for the JICA project to ECD. Through the JICA project, the project supports for law development at ECD by consultant registration scheme and developing application form (submission form). Regarding the consultant registration scheme, the project has collected information in the country and lesson from other countries as well. Also, many internal meeting with ECD officials have been conducted. Additionally, application form is efficient for project proponent to submit their EIA report as attachment.

Mr. Chay Ya: Regarding the physical environment such as soil, water, does Myanmar EIA procedure comply with Japanese standard or international standard?

Dr. Usui: The EIA procedure in Myanmar complies with JICA standard as well as international standard, but in practice is very hard to implement due to capacity of staff and limited staff. Thus, capacity building is needed, especially capacity building for local staff. For example: guideline support by ADB has only around 10 internal meetings, while JICA has organized about 50 internal meetings and discussion with ECD officials.

**Presentation on Overall of CESCO R Project**

**(by Mr. Ito Tsuyoshi, JICA Expert of the project in Cambodia)**

Main points of the presentation are summarized as below:

- Basic information of the project
- Project outline
- Project organization and members
- Past main events related to EIA/EMP team
- Main progress and schedule of EIA/EMP team
- Main events related to EIA/EMP team in the near term
- Planned detail schedule for REG development

- Table of contents of draft REG
- Expecting items to be discussed on this technical exchange

**Questions and answers:**

Mr. Kyaw Khaung Cho: Does MPWT have any legal documents for ROW management along highway and bridge?

Mr. Reagan: Legal documents related to ROW management along national roads and railway are law on land, law on road and sub-degree 197 (article 8 ROW is 30m for national road one digit and so on). I think Myanmar has bigger space for ROW based on my observation.

ECD Official: Does sub-degree 197 have any classification for road, highway, other types of road?

Mr. Reagan: Sub-degree 197 focuses on national roads (1 and 2 digit) and railways under authorization of MPWT and rural road is under Ministry of Rural Development that is mentioned in the law on road.

**Presentation on EIA system and EIA implementation issues of ECD, MONREC in Myanmar (by Dr. San Oo, Director of NRC and EIA Division)**

Main points of the presentation are summarized as below:

- National environment policy statement
- Environmental legislations to improve EIA system
- Myanmar EIA process
- EIA review process
- Key features of good practices and its consequences
- Lessons learnt
- Ways forward

**Questions and answers:**

Mr. Vireak: For public project in Myanmar, can project proponent from government use internal experts instead of third party?

Dr. San Oo: Both private and public projects have to hire third party as EIA reports.

Mr. Reagan: Please kindly confirm about committee of EIA review, whether it is permanent committee or project by project.

The time frame for EIA review should be clarified in EIA procedure

Dr. San Oo: Review team are from technical official at concerned line ministries, project owners, third party and ECD.

Regarding the time frame for reviewing EIA report, we also face with this problem as well. We have to respond within 60 days for IEE, 90 days for EIA and also a lot of reports are waiting for our review. Anyway, we have tried our best to work on that and based on mutual understanding.

**Presentation on Tasks and the implementation issues of MPWT for EIA road sector in Cambodia (by Mr. Srey Vireak, Counter Part, MPWT in Cambodia)**

Main points of the presentation are summarized as below:

- Cambodia at a glance
- Overview of MPWT
- Overview of department of planning
- EIA/EMP related to MPWT's transportation infrastructure
- Conclusion
  - The challenges that EIA process in road sector in Cambodia is facing are; limitation of law enforcement (agreement between contractor and government), lack of some legal regulations and complicated reporting mechanism.
  - For improvement of these conditions, practical "Road Environmental Guidelines in Road Sector in Cambodia" is being prepared under CESCOCoR project.

**Questions and answers:**

Dr. Usui: According to slide presentation 14, who prepares EMP?

Mr. Vireak: Based on regulation, EMP has to be prepared by EIA experts from EIA consulting firm (as third party) and finance supported by project owner or development partners. After that project owner has to implement the EMP.

Mr. Reagan: Donor has requirement stated in ToR with project owner on what to do and not to do.

Myanmar Official: Slide 16 indicates about requirement for conducting EIA, is there any requirement for conducting IEE in road sector?

Mr. Vireak: Requirement for conducting EIA in road sector is from 100km and any road development or improvement across protected area, but it does not mention about requirement for conducting IEE.

**Presentation on ESIA Consideration (by Mr. Kyaw Kaung Cho, Chief of Engineer, Department of Bridge, MOC)**

Main points of the presentation are summarized as below:

- EIA flow chart
- Institutional background
- Institution for environmental governance
- Integrated approaches: development policy and strategic framework
- Fundamental laws and regulations
- Requirement project for IEE and EIA
- Environmental description of Dala bridge
- Conclusion
  - In Myanmar EIA Procedure have been prepared, detailing out the procedural aspects and implementation responsibilities.
  - Work has also commenced on preparation of corresponding Environmental Quality Standards, as required under the Environmental Conservation Law, and EIA technical guidelines.
  - Existing technological, financial and capacity gaps limit Myanmar's ability to achieve its vision for sustainable development while balancing socio-economic development with environmental sustainability.
  - Myanmar requires significant support from the international community for capacity building, technology development and transfer and financial resources to build up the country.

**Questions and answers:**

JICA expert: Does Kala bridge project comply with the EIA procedures?

Mr. Kyaw Kaung Cho: It is okay for environmental impact, but it is hard to comply with the WB and ADB guideline for social impacts. Anyway, the issues have been addressed after many consultations have been conducted with local people and relevant stakeholders.

**Presentation on Infrastructure Development Project in Thilawa area Phase II, Access Road Project (by Ms. Ei Ei Myo, Deputy Director of Department of Highway, MOC)**

Main points of the presentation are summarized as below:

- General description of the project
  - Introduction
  - Proposed road design

- Environmental and social consideration of the project
  - Introduction
  - Right-of-way declaration by MOC
  - Cut-off -Date
  - Survey purpose and methodology
  - Result of census and inventory survey
  - Draft eligibility list
  - Assistance for moving cost
  - Proposed organization to settle the difficulties of relocation and assistance for moving cost in the future
  - About abbreviated relocation action plan (A-RAP)

**Closing remarks (by Dr. San Oo)**

- We are in development stage, we are exchanging and learning lessons from each other. It would be great to improve our work effectiveness and efficiency. Mutual understanding among relevant stakeholders can ensure the harmony our country.
- It is cooperation between two governments. It is very good time to cooperate. And it is just starting now. We are looking forward for future collaboration, even in our office. Thank you very much.



## 5. Meeting with Environmental Conservation Department, MONREC

### (1) Outline

Date & Time	25 <sup>th</sup> October 2017, 2:30 - 4:30 PM
Place	Meeting room at ECD in Nay Pyi Taw
Attendees from Myanmar side	ECD, MONREC 7 persons JICA expert 1 person (Dr. Kanji Usui)
Agenda / Discussion Points	Technical discussion about EIA legal frameworks and implementation in Myanmar and Cambodia

### (2) Minutes of Discussion

#### **Welcome by DG of ECD**

- Would like to thank JICA for arranging the meeting.
- We do expect to have future cooperation between Cambodia and Myanmar in road infrastructure development.

#### **Questions from Cambodia side and Answers from Myanmar side**

Q1) Does IEE report include social impacts and need to conduct public consultation?

A1) It is a requirement that IEE reports have to include social impacts and conducting public consultation because Myanmar government think that people are center of development and people are fundamental for conducting EIA.

Q2) ECD has a mandate to review and approval on EIA reports, so how can you facilitate, compromise and consolidate different points of view during the EIA review meeting?

A2) It has been hard and time consuming to facilitate, compromise and consolidate different points of view who have different backgrounds and expertise. Anyway, we have tried to acknowledge all points of view and try to consolidate all those comments based on the majority and mutual understanding. Also, project owners are also invited to join review meetings and project owners cannot completely deny comments made by the review committee.

Q3) Can EIA report preparation be done by project owner?

A3) EIA report preparation cannot be done by project owner, it must be done by third party (EIA consultants).

Q4) Resettlement Action Plan (RAP) is included in the EIA report in Cambodia. Is it included in the EIA report or not in Myanmar?

A4) Both RAP and EIA report are submitted to ECD, and ECD will call for public meeting to get comments prior to approval.

Q5) Is legal punishment applied for late or irregular report submission?

A5) If we find any legal violation, punishment is applied. But so far there is no project punished.

Q6) Is there any IEE report without conducting public consultation with local affected people?

A6) There are some IEE reports that don't have public consultation with local affected people if the project site is far away from local people.

Q7) Does IEE or EIA report include cost and benefit analysis? Because Cambodia requires to include cost and benefit analysis in the EIA report.

A7) Cost and benefit analysis is very useful and important, but it is not necessary to include cost and benefit analysis for all projects.

Q8) Does third party refer to local EIA experts or international experts?

A8) Third party refers to both local and international EIA experts. However, international experts cannot be stand alone.

### **Questions from Myanmar side and Answers from Cambodia side**

Q9) Are there any legal document or regulation related to EIA in Cambodia?

A9) There are several legal documents and regulation related to EIA in Cambodia such as natural resource and environmental protection law (1996), EIA process sub-degree (1999), Prakas on IEE and EIA report, draft EIA law, some draft EIA sectoral guideline, and environmental code.

Q10) How can EIA report preparation, assessment, review and monitoring be done by Environmental and Social Office of Planning Department at MPWT?

A10) Environmental and Social Office of Planning Department of MPWT is not a main actor or mandate to review, approve and monitoring on EIA report and EMP at all, it is just line agencies to involve as member if there is any related project development in road infrastructure development.

Q11) Is EIA report written in Cambodian or English?

A11) EIA report must be written in Cambodian language.

### **Characteristics of EIA process in Myanmar (Summarized by Mr. Ito based on discussion)**

- 1) Which phase of the EIA process can be involved by the project proponent in Myanmar
  - Project proponent can involve in EIA report review phase and project monitoring phase and EIA report preparation phase have to be done by the third party.
  
- 2) Supposed EIA implementation issues in Myanmar
  - EIA report review phase
    - EIA report review has to be funded by project proponent. We are now recruiting more officials in environment management and environmental engineering.
    - ECD is developing some sectoral guidelines such as oil, gas, mining, hydropower, tourism and public participation guidelines and many consultation meetings have been organized with line agencies and NGOs to develop the guidelines.
  
  - Project monitoring phase (Reviewing EMP, EMoP, EMoR)
    - ECD local staff will report to ECD if project owner does not comply with EMP and ECD will dispatch officials to investigation.
    - We strengthen and law enforcement to ensure that project proponent submit monitoring report regularly.
    - Local staff of ECD have limited capacity, especially technical knowledge and skills.

## 6. Meeting with Department of Highway, MOC

### (1) Outline

Date & Time	26 <sup>th</sup> October 2017, 10:30 - 11:40 AM
Place	Meeting room at MoC in Nay Pyi Taw
Attendees from Myanmar side	Department of Highway, MoC      13 persons JICA expert      1 person (Mr. Kei Senoo)
Agenda / Discussion Points	Technical discussion about EIA implementation in road sector between Cambodia and Myanmar

### (2) Minutes of Discussion

#### **Welcome remarks (by Deputy Director General of Department of Highway)**

- Would like to thank JICA for arranging the meeting.
- We do expect to have future cooperation between Cambodia and Myanmar in road infrastructure development.

#### **Technical exchange on EIA implementation in road sector:**

- All participants are from Department of Highway (DOH) of MOC
- Both grant or loan aid, DOH hires EIA experts to conduct EIA and submit to ECD for approval.
- DOH does not have any experiences in implementing EMP, so far DOH have hired third party to handle the work because officials in charge of EIA are not specialized in the EIA, most of officials are specialized in civil works or infrastructure engineering; even though DOH just have EIA division under DOH.
- For project in the past, DOH did not conduct EIA, but due to requirement of WB, ADB and JICA as development partners, DOH has started to conduct EIA and it is a must for both public and private project. Additionally, officials in DOH also got short-term training by WB, ADB or JICA projects.
- To implement the project, Project Management Unit (PMU) has been established and it consists of environment and social specialists, civil engineers and technical officials from MOC.
- DOH wishes to have a technical exchange in EIA implement in Cambodia through JICA support.

## 7. Main Understandings for the Present EIA System/Process and their Issues in Myanmar

Through the Seminar, including questions and answers, and the meetings with the officials in ECD, MONREC and Department of Highway, MOC in Myanmar, the participants (EIA/EMP Taskforce Members of CESCOR) from the Cambodia side are recognized the followings as main understandings for the present EIA System/Process and the issues in Myanmar.

Items	Main Findings in Myanmar
1) EIA System/Process in Myanmar as a whole	<ul style="list-style-type: none"> <li>• Myanmar has National Environment Policy Statement, adopted 1994, Environment Quality Standard (29, Dec 2015) especially the EIA procedure.</li> <li>• The EIA system/process in Myanmar is similar to the EIA system/process in Cambodia.</li> <li>• Law of EIA procedure, time frame, follows the procedure and the time frame of each phase, but some phases of EIA process are not go smooth. For example, some projects delay the EIA report preparation.</li> </ul>
2) EIA Report Preparation Phase	<ul style="list-style-type: none"> <li>• Actually, EIA Reports in Myanmar are preparing by the third party not by the project proponent (project owner).</li> <li>• EIA report prepared by the third party, the EIA report follows EIA guideline but some projects are difficult to define for requirements of IEE or EIA, therefore, the ECD needs to investigate the project sites, for example.</li> </ul>
3) EIA Report Reviewing Phase	<ul style="list-style-type: none"> <li>• The EIA Reports are to be reviewed by committee members, which is established and chaired by ECD, MoNREC.</li> <li>• Follow the EIA procedure, the reviewed by ECD, relevant stakeholders from different ministries, the time frame of revision but ECD has limited human resources to review the EIA report.</li> </ul>
4) Project Environmental Monitoring Phase	<ul style="list-style-type: none"> <li>• The Project proponent (Project Owner) uses Environmental Management Plan (EMP) for monitoring activities and submits the Environmental Monitoring Report regularly (3 or 6 months basis).</li> <li>• EMPs are prepared by the third party, but some projects comply with the EMPs.</li> </ul>
5) Public Consultations (Public Meetings)	<ul style="list-style-type: none"> <li>• The public consultation as a part of process of EIA System is carried out either IEE or EIA project.</li> <li>• According to ECD, the public consultations are good chance to discuss the project contents from diversified stakeholders, but actually the public consultations are affected to defined time frame of the EIA process.</li> </ul>

## 8. Specific Findings related to EIA Implementation Issues and their Improvement Ideas

### (1) Findings related to EIA Implementation Issues

The EIA/EMP Taskforce Members of CESCOR was able to conduct individual meeting with related officials of the ECD MoNREC as the Competent Authority for the EIA, and the Department of Highway, MoC as a one of the project owner (project proponent) for each one time during the Third Country Technical Exchange.

According to the meetings, the EIA/EMP Taskforce Members of CESCOR understood the followings as main specific present EIA implementation issues in Myanmar:

Items	Main Findings
1 As the Competent Authority (ECD, MoNREC) of the EIA	
1) Technical knowledge/skills of the staff to review EIA or EMP	<ul style="list-style-type: none"> <li>• Insufficient EIA/EMP related technical capacities.</li> <li>• It is need more diversified skills relate to EIA/EMP of the staff.</li> </ul>
2) Sectoral EIA Guidelines	<ul style="list-style-type: none"> <li>• Myanmar has the Sectoral EIA Guideline on mining, tourism, hydro, as well as oil and gas sector</li> </ul>
3) Contents of EMP	<ul style="list-style-type: none"> <li>• Actually, the contents of the EMP are based on related donor's ideas.</li> </ul>
4) Mitigation Measures	<ul style="list-style-type: none"> <li>• Capacity of the local contractor to carry out the EMP is limited.</li> <li>• Sometimes, Environmental Monitoring Report is rarely submitted to ECD.</li> </ul>
2 As a Project Owner (Department of Highway, MoC)	
1) Technical knowledge/skills of the staff to review EIA or EMP	<ul style="list-style-type: none"> <li>• Environmental Division, under MoC was recently established. Therefore, the staff of MoC has few EIA related skills/knowledge.</li> <li>• Actually, EIA or EMP is conducted by outside environmental and social experts.</li> </ul>
2) Sector EIA Guideline	<ul style="list-style-type: none"> <li>• MoC applies the EIA based on the ECD's general EIA guideline.</li> </ul>
3) PMU in general with MoC	<ul style="list-style-type: none"> <li>• At present, the PMU is established, and it consists of civil engineers, and other technical officials from MoC, as well as environmental and social specialists from the outside.</li> </ul>
4) Suggestions	<ul style="list-style-type: none"> <li>• Capacity development of the EIA EMP related skills/knowledges for the MoC staff, who are in charge of the EIA/EMP, are essential.</li> </ul>

## (2) Improvement Ideas for the EIA Implementation Issues for road sector in Cambodia

Through the technical exchange, the EIA/EMP Taskforce Members of CESCOR considered and proposed the followings as present improvement ideas for the EIA Implementation Issues in road sector in Cambodia:

- More technical capacity development for the officials of the Project Owner (Project Proponent), who is in charge of the EIA/EMP through the On the Job Training (OJT), is recommended with the budget.
- Capacity development and technical training on EIA or EMP associated to public works and transport for the designated office or division
- It is proposed that the Environmental Social Office (ESO), Department of Planning should be included in each PMU to carry out the EIA or EMP related official works associated to public works and transport project.



Discussion with ECD Officers



Visit to the Office of ECD (Oct. 25th)



Discussion with DOB Officers



Site visit at New Thaketa Bridge construction site



THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



Date: 25 October 2017  
Time:  
Location: Park Royal Hotel in Nay Pyi Taw  
Topic: Technical Exchange Seminar

**Sign-in Sheet**  
(Cambodian Participants)

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Mr. Prek Novida	Department of Planning, MPWT	Director			
2	Mr. Srey Vireak	E&S Office, DoP, MPWT	Official			
3	Mr. Bour Chhay Ya	E&S Office, DoP, MPWT	Official			
4	Mr. Dun Vandyreagan	Monitoring and Evaluation office, ICD, MPWT	Chief of Office			
5	Mr. Peang Samoeun	ICD, MPWT	Deputy Chief of Office			
6	Mr. Manh Vutha	Bilateral Cooperation Office, ICD, MPWT	Deputy Chief			
7	Ms. Men Uormalin	EIA Department, MoE	Official			
8	Mr. Yav Net	EIA Department, MoE	Official			
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Attachment: Sign-in Sheet of the Seminar and the Meetings



THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



Date: 25 October 2017  
Time:  
Location: Park Royal Hotel in Nay Pyi Taw  
Topic: Technical Exchange Seminar

**Sign-in Sheet**  
(JICA Project Team in Cambodia)

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Mr. Ito Tsuyoshi	JICA project team	ESC/EIA/EMP Expert			
2	Ms. Nakayama Makiko	JICA project team	Training Plan and Implementation I			
3	Mr. Penh Socheat	JICA project team	Technical Assistant			
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THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



Date: 25 October 2017

Time:

Location: Park Royal Hotel in Nay Pyi Taw

Topic: Technical Exchange Seminar

Sign-in Sheet  
(Myanmar Official)

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	U Aung Hla Hla	EIA / ECD / MONREC	Deputy Director			
2	Saw Maung Thein	EIA / ECD / MONREC	Deputy Staff Officer			
3	Daw Aye Win	ECD / MONREC	AD			
4	Daw Aye Su Yee	ECD / MONREC	DSO			
5	Htet Thiri	ECD / MONREC	DSO			
6	Lada Ma Tin Win	ECD / MONREC	DSO			
7	Min Aye Hlae	ECD	-			
8	Aung Wo Ko	ECD	DSO			
9	Mr. Kyi Kun	ECD	Staff Officer			
10	Daw Thun Win	MOC	AD			

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THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



11	Khin Myat Thwe	Environmental Conservation Department	Staff Officer			
12	Khin Myo Set Aye	"	Deputy Staff Officer			
13	Tin Tin Aye	"	Staff Officer			
14	U Thaw Aye	"	DSO			
15	U Ye Yin Htet	Ministry of Construction	staff officer			
16	U Kyaw Kyaw Cho	Ministry of Construction	Chief Engineer			
17	Daw Soe Zin Aye	Ministry of Construction	Staff Officer			
18	Daw Yin Ma Maung	Ministry of Construction	Assistant Engineer			
19	Daw Aye Khin Myar	ECD	Deputy Staff Officer			
20	Daw Me Me Htin	DOB, MOC	Assistant Director			
21	Daw Ei Ei Tun	DOB, MOC	Staff Officer			
22	Dr San Oo	ECD / MONREC	Director			
23	U Toe Toe	DOB / MOC	Deputy Director			
24	Daw Ei Ei Myo	DOB, MOC	Deputy Director			
25						

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THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



Date: 25 October 2017

Time:

Location: Park Royal Hotel in Nay Pyi Taw

Topic: Technical Exchange Seminar

Sign-in Sheet  
(JICA Project Team and JICA Office in Myanmar)

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Ms. Thi Thu Lan	JICA Myanmar Office	Assistant Program Officer			
2	KEI GENO	JICA/MOC	JICA expert			
3	ကျော် မိုးညို	ဥက္ကဋ္ဌ	ဥက္ကဋ္ဌ			
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THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



Date: October 25, 2017

Time:

Location: ECD, MONREC

Topic: Technical Exchange Seminar

Sign-in Sheet  
(Myanmar Official)

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Yau Net	EIA / H-E	Technical officer			
2	MEAN LONMALIN	EIA / MoE	officer			
3	BEANG Sam Oun	ICD / MPWT	Deputy chief officer			
4	MINH VUTHA	ICD / MPWT	Deputy chief officer			
5	Dun Vandysrean	ICD / MPWT	Chief officer			
6	Srey Vitreak	ICD / MPWT	Environmental and Social officer			
7	Boar Chhay Ya	ICD / MPWT	Environmental and Social officer			
8	Kingj Ussai	JICA / MONREC	Advisor			
9	BROR NOVISA	DoP, MBNT	Director of ICD			
10						

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October 25, 2017  
 ECD, MoNRE



THE PROJECT FOR CAPACITY ENHANCEMENT  
 ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
 IN IMPLEMENTING AGENCY IN ROAD SECTOR  
 IN THE KINGDOM OF CAMBODIA (CESCOR)



11	Dr. Sun Go	EIA Div. / ECD	Director		
12	Ms. Hla Ma Hlae	EIA / ECD	Deputy Director		
13	U Linn Aung	EIA / ECD	Deputy Staff Officer		
14	U Soe Thila	EIA / ECD	Deputy Staff Officer		
15	Ms. Kyi Linn	- - -	Staff Officer		
16	Ms. Thoe Nu Hla	EIA / ECD	Staff Officer		
17					
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THE PROJECT FOR CAPACITY ENHANCEMENT  
 ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
 IN IMPLEMENTING AGENCY IN ROAD SECTOR  
 IN THE KINGDOM OF CAMBODIA (CESCOR)



Date: 16 October 2017  
 Time:  
 Location: Ministry of Construction  
 Topic:

Participants List

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1						
2	BRUK NOVIDA	DoP, MPWT	Director of D1			
3	Don Vandy reang	MPWT / ICD	Chief officer			
4	Manh Vutha	ICD / HRWT	Deputy chief officer			
5	Pongy Somboun	ICD / MPWT	Deputy chief officer			
6	Bour Chhay Ya	DoP / MPWT	Social and Environment officer			
7	Srey Vireak	DoP / MPWT	Environment and social officer			
8	Yau Net	EIA / M.E	Technical officer			

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October 26, 2017  
MOC



THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



No	Name	Department/Ministry	Position	Phone	E-mail	Signature
	HEM VANNALIN	EIA / MOC	Technical officer			
	THAN NAINA	DOH / MOC	Staff officer			
	U SHWE ZIN		Director			
	U Phany Myint Aung	DOH	C.E			
	U Rajan	DOH	CE			
	U Khinmy Kywe	DOH / MOC	DDG			



## EIA System in Myanmar

Dr. San Oo  
Director

25<sup>th</sup> October 2017

Nay Pyi Taw

### Outline

- National Environment Policy Statement
- Environmental legislations to improve EIA system
- Myanmar EIA Process
- EIA Review Process
- Key Features of Good Practices and its Consequences
- Lessons Learnt
- Ways Forward

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### State Constitution 2008



- **Sec. 45**  
The Union shall protect and conserve natural environment
- **Sec. 390 (b)**  
Every citizen has the duty to assist the Union carrying out the environmental conservation

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### Myanmar Agenda 21

- ✓ Formulated 1997
- ✓ important step in the process of achieving sustainable development in the country
- ✓ part of the country's effort to fulfill its commitments to the historic Earth Summit in 1992.
- ✓ 4 main parts with 19 chapters

6

### National Environment Policy Statement

- Adopted in 1994
- **Objective:** aimed at achieving harmony and balance between economic development and environment,
- the integration of environmental considerations into the development process to enhance the quality of life of all Myanmar's citizens.
- Environmental protection should always be the primary objective in seeking development.

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### Environmental Conservation Law, 2012

#### Objectives of the Law

- ✓ to enable to emerge a healthy and clean environment and to enable to conserve natural and cultural heritage for the benefit of present and future generations;
- ✓ to reclaim ecosystems as may be possible which are starting to degenerate and disappear;
- ✓ to enable to manage and implement for decrease and loss of natural resources and for enabling the sustainable use beneficially;

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### Environmental legislations to improve EIA system

- Constitution (2008)
- Myanmar Agenda 21 (1997)
- National Sustainable Development Strategy –NSDS (2009)
- Environmental Conservation Law (2012)
- Environmental Conservation Rules (2014)
- Environmental Impact Assessment Procedures (29 - Dec, 2015)
- Environmental Quality Standards (29 - Dec, 2015)
- Myanmar Investment Law (2012)
- Myanmar Investment Rules (2013)
- Notifications for Investment (2013)

### Environmental Conservation Law, 2012

#### Section 7 (m) of the Law describes:

to lay down and carry out a system of EIA and SIA as to whether or not a project or activity to be undertaken by any Government department, organization or person may cause a significant impact on the environment;

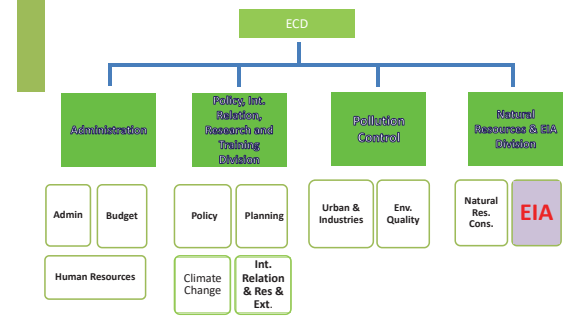
8

### Development of EIA Procedure

- Section 7 of the Law and Articles 52 and 53 of the Rules clearly mentioned that all Projects having the potential significant Adverse Impacts requires to undertake IEE or EIA
- MONREC just has been notified EIA procedure (Experts from ADB GMS-EOC have been providing technical support)

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### Organization Structure of ECD



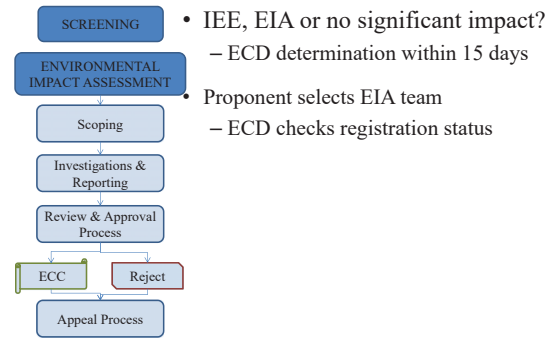
### Myanmar Investment Law

- Section (34) of Myanmar Investment Law (2012) describes that:

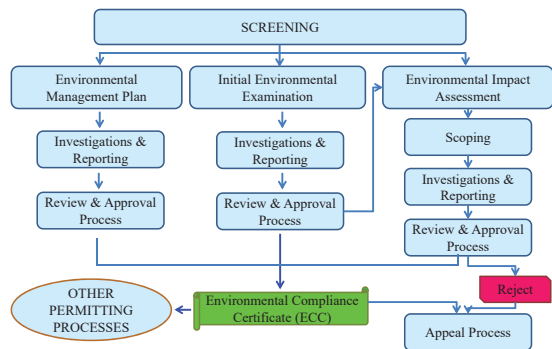
In submitting the proposal for the capital intensive investment projects designated by the Commission and designated businesses which need to assess the environmental impact by MONREC, **the EIA and SIA reports shall be attached together with the investment proposal.**

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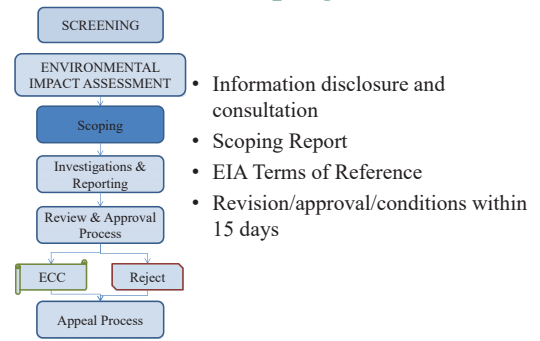
### Screening



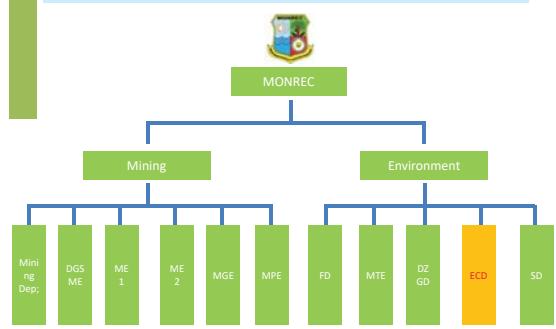
### Myanmar's EIA process



### Scoping



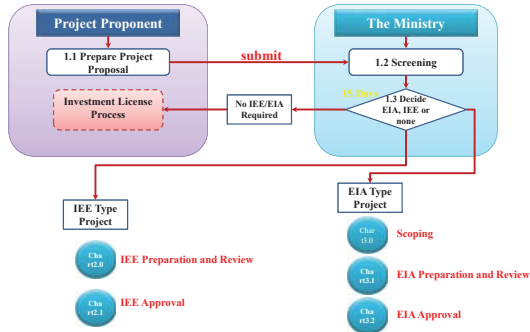
### Organization Structure of MONREC



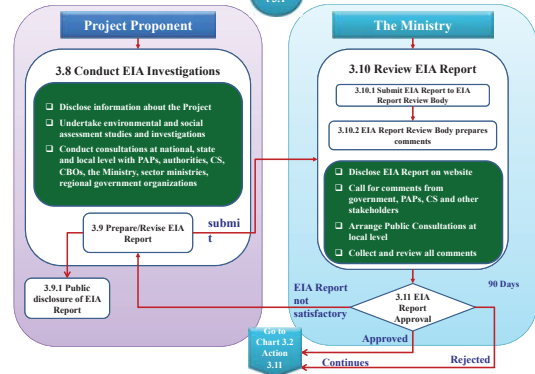
### EIA Investigation



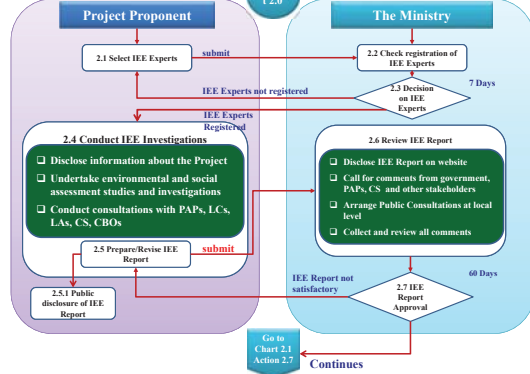
### Screening



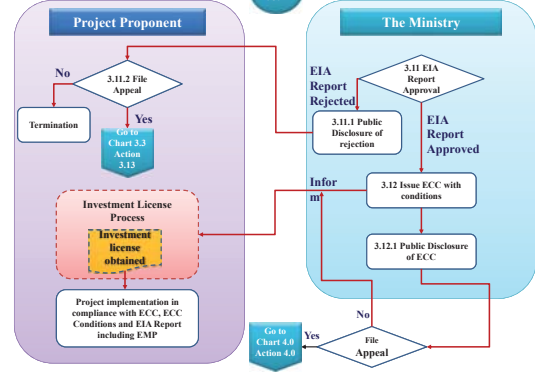
### EIA Preparation and Review



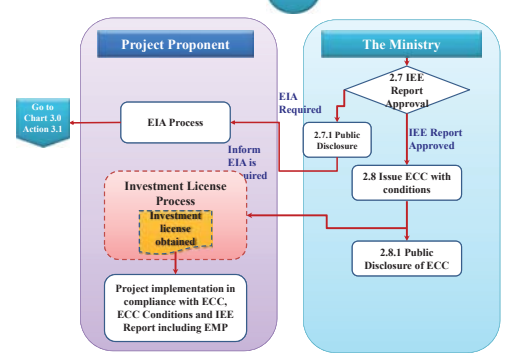
### IEE Preparation and Review



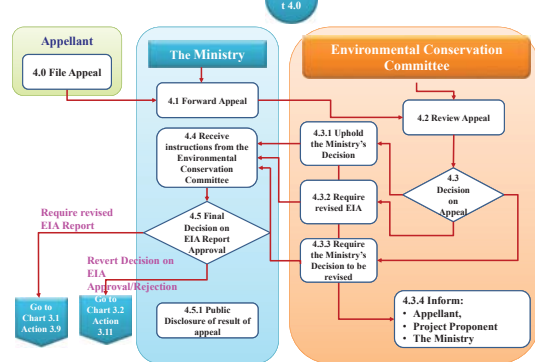
### EIA Approval



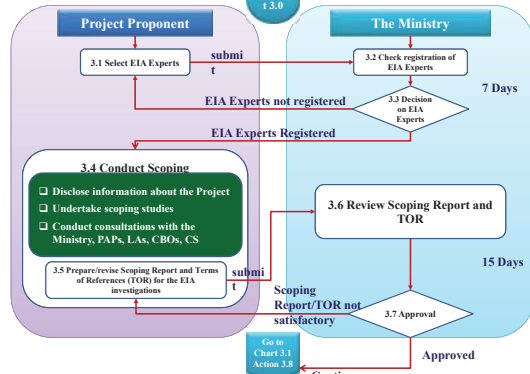
### IEE Approval



### Appeal



### Scoping



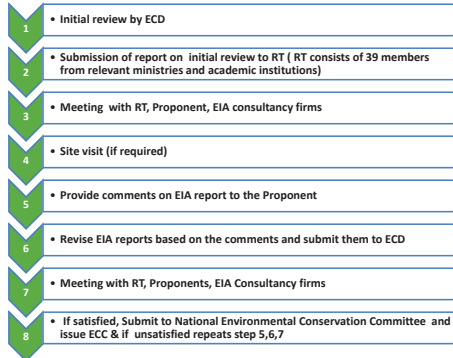
### EIA Review Process

- The EIA Review Committee established and assigned by MOECAF
- In accordance with Article 59, the Environmental Conservation Rules, the committee is responsible to review and provide comments/ recommendation to EIA reports (EIA review team do the official review and the Environmental Conservation Committee approves EIA reports)

### EIA Review Process

- Out of 39 membership, 20 assigned from MOECAF and 19 from other ministries, universities, and city development committees (2015)
- Currently the Committee organized to review EIA for the projects under four categories as the priority:
  - 1) coal-fired power plant; 2) on-shore and off-shore oil/gas extraction; 3) oil refinery; and 4) hydro-power

### EIA Review Process



### Ways Forward

- Need for enhanced information sharing and understanding by the Committee members
- Need for enhanced capacity of MONREC for organizing the Committee’s review process
- Trainings and guidance on EIA review to be provided by JICA and ADB

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### International Cooperation

- JICA (Capacity Development in Basic Water Environmental Management and EIA System in Myanmar)
- IFC (Advisory Agreement on Improving Environmental and Social Standards of the Hydropower Sector in Myanmar)
- NEA (Management of Hazardous waste in Myanmar)
- ADB( Environmental Safeguard Institutional Strengthening)
- Vermont Law School

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### Key Features of Good Practices and its Consequences

- Multifarious opinions presented at the Committee from the members including academic and governmental institutions
- Normally, the committee meetings are participated by the Committee members and ECD officers. However, based on necessity, project proponents and EIA Consultants are invited to the meetings

### Lessons Learnt

- Strong vertically structured administration hindered effective coordination mechanism among ministries and departments
- Comments from the members sometimes deviating from the purpose and requirements of EIA system laid out by MONREC and ECD
- Still limited understanding of the EIA-related laws, rules and regulations by the Committee members
- Difficulties in coordinating and compiling diverse opinions from the Committee members from different backgrounds

### JICA’s Capacity Development on EIA in Myanmar

#### Aim of the Project

- To support for the initial attempt of the Government of Myanmar so that we can smoothly go through the fundamental operations.

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### JICA’s Capacity Development on EIA in Myanmar

#### Roadmap of the Project

- Building of EIA fundamentals (Short-term goal)
- Sustainment of EIA in society (Mid-term goal)
- Take-off (Long-term goal)

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**Third Country Technical Exchange Program**  
 "The Project for capacity Development in Basic Water Environment Management and EIA System in Myanmar"

**Capacity Development Project for EIA in Myanmar**

25th October, 2017  
 Kanji USUI, Ph.D.

JICA Expert for EIA, Myanmar  
 (ESC Research)

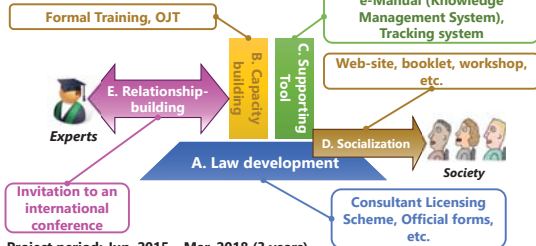


Japan International Cooperation Agency

**EIA capacity development**

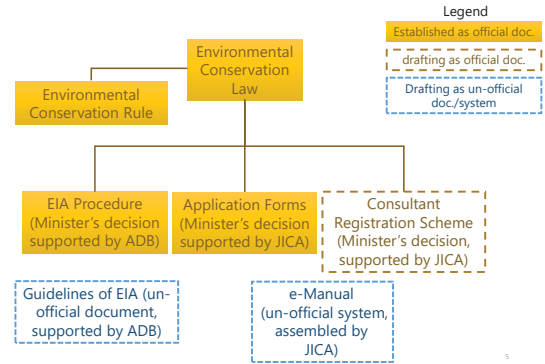


"Purpose of the Project"  
 To contribute toward an advanced initiatives to address complicated EIA issues

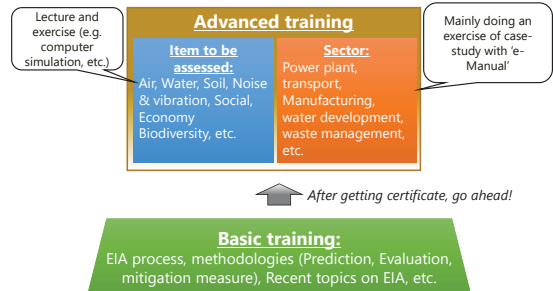


Project period: Jun. 2015 – Mar. 2018 (3 years)  
 (Pre-dispatch: Jan. 2014 – Mar. 2015)

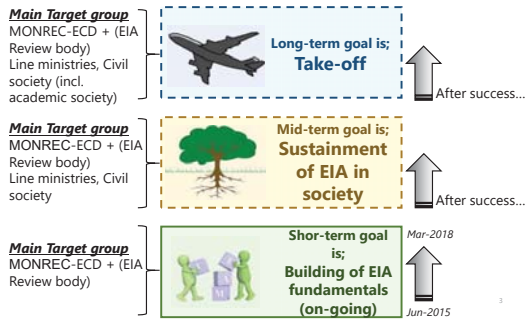
**A. Support for Law Development**



**B. Capacity building**



**Short, middle and long-term goal of EIA Capacity Development**



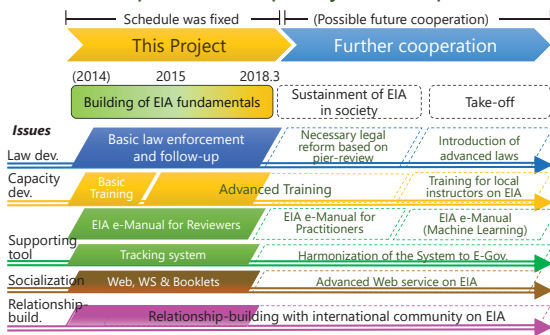
**Curriculum of the training modules**

Advanced Training	
#1 Air pollution	#5 Strategic Environmental Assessment
#2 Water pollution	#6 Noise and vibration
#3 Risk assessment and Integrated evaluation method	#7 Ground Environment
#4 Flora / fauna and biodiversity	#8 Social Issues

Basic Training	
#1 Introduction of EIA, Screening and Scoping	#5 EIA Quality Review
#2 Impact Prediction	#6 Public Consultation and information disclosure
#3 Alternatives and impact evaluation	#7 Various EIA
#4 Mitigation Measure, Management and Monitoring	

**Roadmap of EIA Capacity Development**



**Features of the Training**

• The both training modules include 'Exercise' such as:



Group work (Scoping, EMP, Quality Review, Role playing, etc.)



A simple computer simulation with MS-Excel (Air pollution, water pollution, noise level, slope stability, etc.)

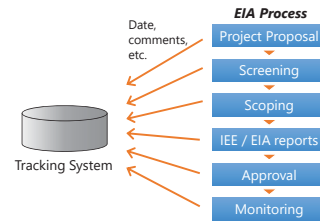
## C. Supporting tools

- Purpose:
  - To provide the effective and efficient supporting tools to ECD and EIA Review Committee in order to improve their review works
- Tools to be developed
  - **e-Manual:**
    - A computerized system to provide various technical knowledge to users (describe in details, later)
  - **Tracking System:**
    - A kind of Database to record every information of EIA review e.g. submission date, comments, results of review, etc.

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## Tracking system

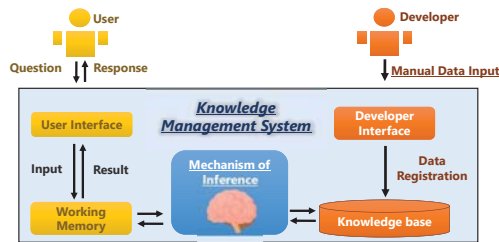
- Purpose of the system:
  - to record the track of EIA review process
  - e.g. submission date of reports, comments, approval date, etc.



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## e-Manual

- A Knowledge Management System (rule based system) will be developed as an e-Manual:
  - Easy to obtain necessary tips from the system



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## D. Socialization

- To disseminate the basic knowledge of EIA to public
- Activities
  - Development of 'EIA Portal Site'
  - Workshop on EIA system in Major cities (Nay Pyi Taw, Yangon, Mandalay, etc.)
  - Leaflet and Booklet on EIA



EIA Portal Site: ([www.ecd.gov.mm](http://www.ecd.gov.mm))



Workshop on EIA in NPT  
(Permanent Secretary of MONREC)

## Coverage of e-Manual

Purpose	To provide <u>technical knowledge</u> for 'EIA Reviewers' based on EIA Procedure No.616/2015 (Myanmar's EIA system)
Users	<b>EIA reviewers:</b> ECD staff and Members of EIA Review Committee
Scope	Technical knowledge of Every development sector for Reviewing
Development period	Two years (commenced since 2016)
Platform	Windows 10 (Microsoft-Excel)
Release schedule	<b>End of 2017</b> (A prototype version has already been released for various tests)

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## E. Relationship-building

- Purpose:
  - To make a good relationship with international society
- Activities:
  - Invitation to an international conference e.g. IAIA annual conference
    - Three ECD's officers were invited to IAIA16 held in Nagoya, Japan.
  - Others
    - International workshop with other countries e.g. Cambodia (Today's workshop)



A presentation session in IAIA16, Nagoya-Japan (Mr. Sein and Dr. Kanji)

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## Mechanism of e-Manual

- The system is assembled by a combination of many '**Production Rules**'
  - Production Rule is a sort of Computer Language, which consists of 'IF' and 'THEN' parts as follows:

### Production Rules:

**IF (condition):**  
e.g. Height of Dam is more than 15.0m.



**THEN (executing part):**  
e.g. Require the EIA process

When the condition of 'IF' part is satisfied, the commands of 'THEN' part is executed.

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Thank you for your attention!

• Kanji Usui, Ph.D.  
e-Mail: [usui.kanji@escr.jp](mailto:usui.kanji@escr.jp)

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## **JICA's Capacity Development on EIA in Myanmar**

### **Components of the Project**

- Law Development
- Socialization
- Capacity Building
- Supporting tools and
- Relationship Building

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**Thank you for your attention!**



**Outline of the Third Country Technical Exchange  
under the “Project for Capacity Enhancement on Environmental and Social  
Considerations in Implementing Agency in Road Sector in the Kingdom of Cambodia”**

**1. Purposes of the Technical Exchange**

- To obtain the knowledge on EIA in Myanmar as reference to develop REG in the Project;
  - To understand EIA System in Myanmar through the discussion with Ministry of Natural Resource and Environmental Conservation in Myanmar and JICA’s EIA Project;
  - To exchange ideas or experiences in EIA Public Infrastructure Sector with Ministry of Construction in Myanmar; and
  - To find out the challenges on EIA issues in Myanmar by site visit.

**2. Period of the Training**

- 24 October 2017 (Tue) – 28 October 2017 (Sat) (Total 5days)

**3. Target Participants from Cambodia**

(1) Ministry of Public Works and Transport(MPWT) of Cambodia:

Taskforce members from each department, or MPWT officers who are in charge of Environment Impact Assessment.

- Planning Department: 3 Persons
- International Cooperation Department: 3 Persons

(2) Ministry of Environment (MOE) of Cambodia:

The officers who are in charge of Environment Impact Assessment in Road Sector.

- EIA Department: 2 Persons

**4. Language for the Technical Exchange**

- English

**5. Schedule for the Third Country Technical Exchange in Myanmar (Tentative)**

No.	Date		Schedule	Location
1	24	Tue	(PM) Leave from Phnom Penh to Nay Pyi Taw	
2	25	Wed	(8:30-13:00) Technical Exchange Seminar (14:30-16:30) Meeting with Ministry of Natural Resources and Environmental Conservation (MoNREC) and JICA Project	NPT
3	26	Thu	(10:00 a.m.) Technical Exchange Meeting with Ministry of Construction (PM) Site visit in Nay Pyi Taw	NPT
4	27	Fri	(AM/PM) Move from Nay Pyi Taw to Yangon	YGN
5	28	Sat	(AM/PM) Leave from Yangon to Phnom Penh	

\* The Participants will make a presentation at Technical Exchange Seminar/Meetings. The program will be confirmed by 10<sup>th</sup> October 2017.

**6. Program Schedule (Tentative)**

**(a) Date: 25 October 2017 (Wednesday) (AM)**

**Time: 8:30 – 13:00**

**Venue: Park Royal Hotel at Nay Pyi Taw in Myanmar**

<b>Time</b>	<b>Draft Topics</b>	<b>Speaker/Presenter, Participants</b>
8:30– 9:00	Registration of Participants	
9:00– 9:05	Opening Remarks	Representative of Counter Part, Environmental Conservation Department (ECD), Ministry of Natural Resources and Environmental Conservation (MONREC) in Myanmar
9:05-9:10	Brief Explanation of Seminar Objectives and the Topics	Mr. Prok Novida, Director of Planning Department, Ministry of Public Works and Transportation (MPWT) in Cambodia
9:10-9:15	Brief Self- Introduction	All Participants
9:15-9:45	Explanation and Q&A for “The Project for capacity Development in Basic Water Environment Management and EIA System in Myanmar”	Dr. Kanji Usui, JICA Expert of the Project in Myanmar
9:45-10:15	Explanation and Q&A for “The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)”	Mr. Tsuyoshi Ito, JICA Expert of the Project in Cambodia
10:15-10:30	<i>Coffee Break</i>	
10:30-11:00	Explanation and Q&A for “EIA System and EIA Implementation Issues of ECD, MONREC in Myanmar”	Dr. San Oo, Director of NRC and EIA Division, ECD-MONREC in Myanmar
11:00-11:30	Explanation and Q&A of “Tasks and the Implementation Issues of MPWT for EIA Road Sector in Cambodia”	Mr. Srey Vireak, Counter Part (Department of Planning, MPWT in Cambodia)
11:30-12:00	Explanation and Q&A of “Tasks and the Implementation Issues of MoC for EIA Road and Bridge Sector in Myanmar”	Official from MoC in Myanmar (TBC)
12:00-12:10	Closing Remarks (Wrap up)	Representative of Counter Part (Environmental Conservation Department ECD, MONREC in Myanmar)
12:10-13:00	<i>Luncheon</i>	All Participants

**Date: 25 October 2017 (PM)**

**Time:** 14:30-15:30 (About 1 hour)

**Venue:** Meeting Room at ECD, MONREC in Myanmar

**Discussion Topic:** “Concrete Q&A and Discussions among Both Project C/Ps, and JICA Experts concerning EIA System and the Implementation issues in Myanmar and Cambodia”

**Participants:** Both JICA Project Counter Parts in Myanmar and Cambodia, and the JICA Experts

**(b) Date: 26 October 2017 (Thursday) (AM)**

**Time:** 10:00-11:00 (About 1 hour)

**Venue:** Meeting Room at MoC in Nay Pyi Taw, Myanmar

**Discussion Topic:** Concrete Q&A and Discussions concerning EIA Tasks and the Implementation issues as the Project Owner for Road and Bridge Project in Myanmar and Cambodia

**Participants:**

- MoC Officials, who are involved in EIA in Myanmar
- CESCO R Counter Parts/JICA Expert (Mr. Ito)
- JICA Expert in MoC (Mr. Mitsubishi) if available

**Date: 26 October 2017 (Thursday) (PM)**

**Site Visit after finishing the above discussion**

CESCO R Counter Part’s Road Development/Environment related Site Visits around Nay Pyi Taw, under guiding or cooperation by MoC Officials in Myanmar.

**7. JICA Experts and nominated Officers attending the 3<sup>rd</sup> Country Technical Exchange from Cambodian Side**

No	Name	Position	Organization	Contact
1	Mr. PROK Novida	Director	DoP, MPWT	Tel: 012-546-618 Email: mpwtproknovida@yahoo.com
2	Mr. DUN Vandyreagan	Chief Officer	ICD, MPWT	Tel: 078-334-315 Email: dyrygan@yahoo.com.sg
3	Mr. PEANG Samoeun	Deputy Chief Officer	ICD, MPWT	Tel: 012-685-382 Email: samoeun.peang@gmail.com
4	Mr. MANH Vutha	Deputy Chief Officer	ICD, MPWT	Tel: 098-637-073 Email: manh.vutha168@gmail.com
5	Mr. SREY Vireak	Officer	DoP, MPWT	Tel: 011-340-434/070-991-505 Email: srey.vireak@yahoo.com
6	Mr. BOUR ChhayYa	Officer	DoP, MPWT	Tel: 096-611-1171 Email: chhayya.99@gmail.com
7	Mr. YAV Net	Officer	EIA, MoE	Tel: 092-664-097 Email: yavnet2011@gmail.com
8	Ms. MEN Uonmalin	Officer	EIA, MoE	Tel: 078-665-659 Email: menuonmalin1986@gmail.com
9	Mr. ITO Tsuyoshi	ESC / EIA / EMP	JICA Project Team	Email: ito@ctii.co.jp

10	Ms. NAKAYAMA Makiko	Training Plan and Implementation 1	JICA Project Team	Tel: 011-660-724 Email: nakayama.makiko@ctii.co.jp
11	Mr. PENH Socheat	Technical Assistant	JICA Project Team	Tel: 087-431-777 Email: socheatpenh2005@yahoo.co.uk

Notes:

ESC = Environmental and Social Considerations

EIA = Environmental Impact Assessment

EMP = Environmental Management Plan

ICD = International Cooperation Department

DoP = Department of Planning

MPWT = Ministry of Public Works and Transportation

MoE = Ministry of Environment in Cambodia

# ESIA Consideration



**Kyaw Kaung Cho**  
**Chief Engineer (Civil)**  
**Department of Bridge**  
**Ministry of Construction**

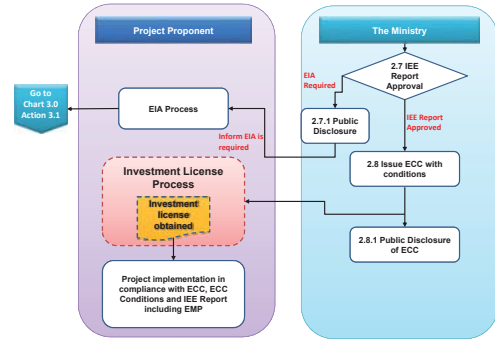
25<sup>th</sup> October 2017

## EIA Flow Chart

- Screening
- IEE preparation and Review
- IEE Approval
- Scoping for EIA
- EIA preparation and Review
- EIA Approval
- Appeal

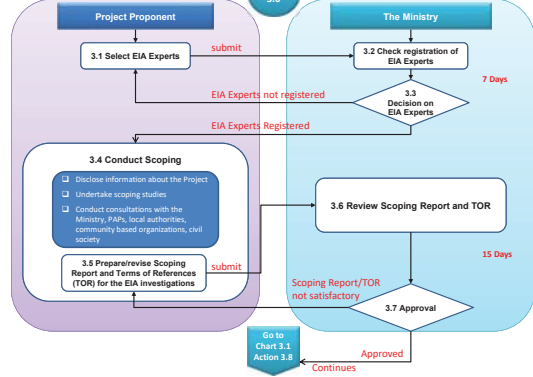
### IEE Approval

Chart 2.1

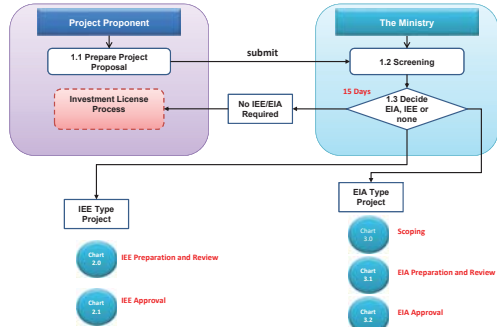


### Scoping

Chart 3.0

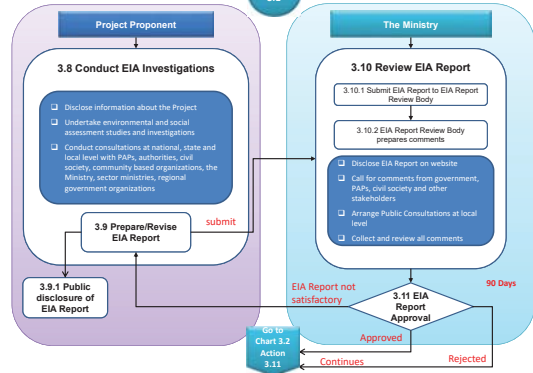


### Screening



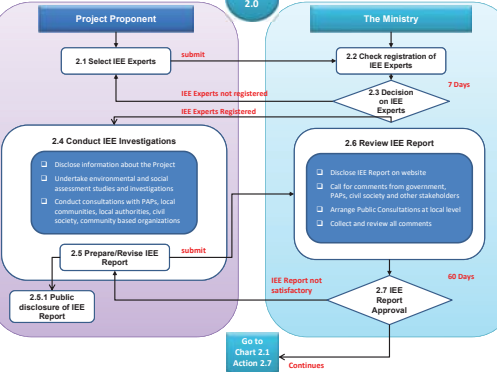
### EIA Preparation and Review

Chart 3.1



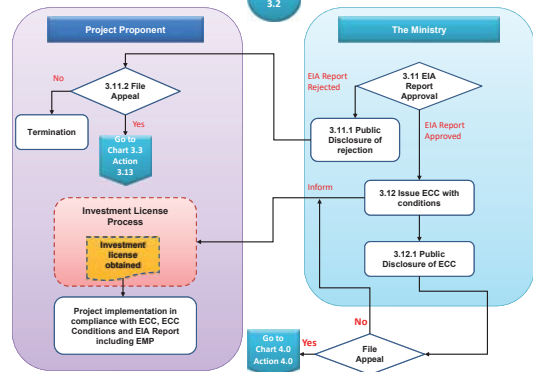
### IEE Preparation and Review

Chart 2.0

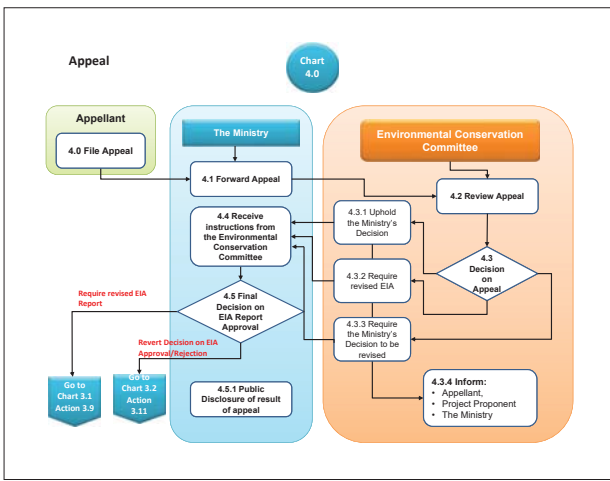


### EIA Approval

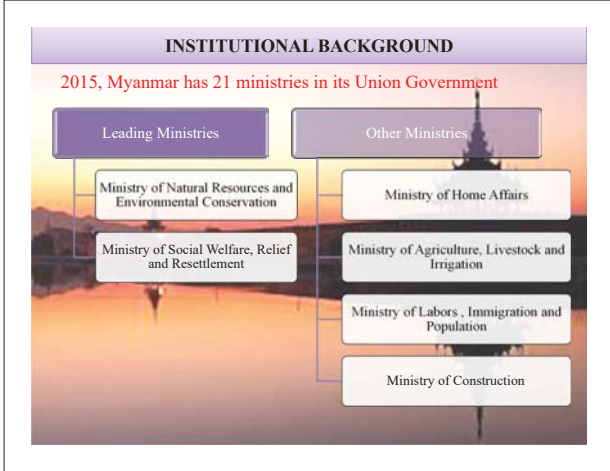
Chart 3.2





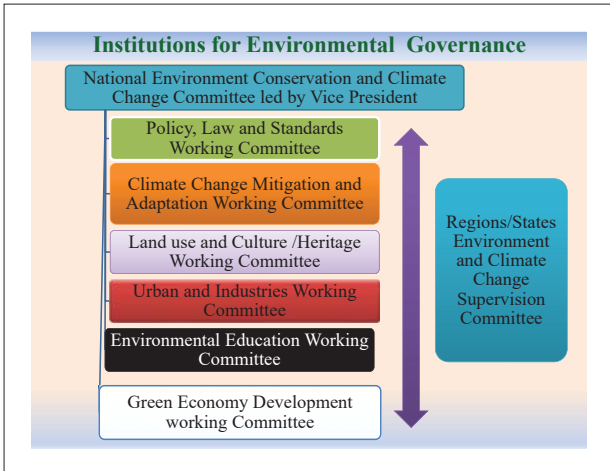


FUNDAMENTAL LAWS AND REGULATIONS		
No	Laws and Regulations	Registered Years
1.	Land Acquisition Act	1894
2.	Irrigation Laws and Regulations	1982
3.	Law on Aquaculture	1989
4.	Freshwater Fisheries Law	1991
5.	National Environment Policy	1994
6.	The Conservation of Water Resources and Rivers Law	2006
7.	Constitution	2008
8.	Environmental Conservation Law	2012
9.	Farmland Act	2012
10.	Farmland Rules	2012
11.	MIC Law & Rules & Notification	2013
12.	SEZ Law	2014
13.	Environmental Conservation Rules	2014
14.	Myanmar Special Economic Zone Law	2014
15.	National Environmental Quality (Emission) Guidelines	2015
16.	National Land Use Policy	2015
17.	EIA Procedures	2015
18.	Intended Nationally Determined Contributions (INDC)	2015
19.	Some Of Relevant Sectorial Laws and Rules : Water Policy, Forest Policy, Forest Law	2015



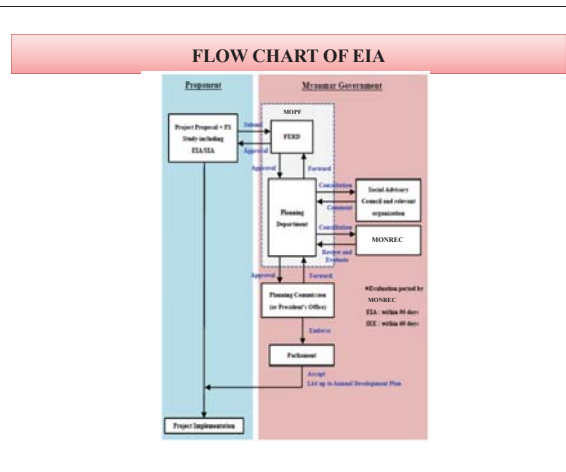
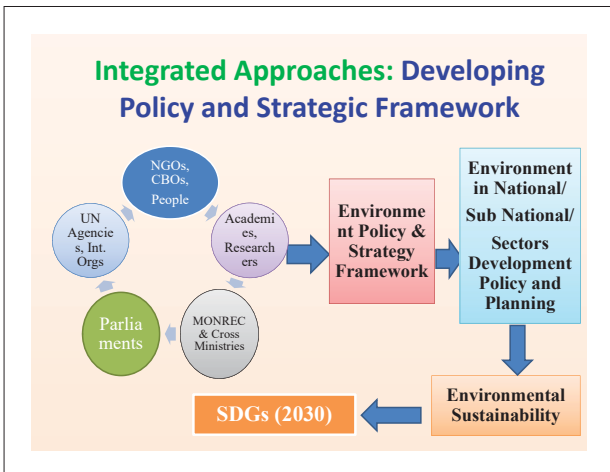
**REQUIREMENT PROJECTS FOR IEE & EIA**

No	Type of Investment projects	IEE	EIA
1.	Construction of Bridges cross over the river and Flyover Bridges	Length of 200 m and above, less than 2 km	2 km in length and above
2.	Upgrading of Bridges cross over the river and Flyover Bridges	300 m in length and above	All projects which are stipulated by the Ministry that need to do environmental impact assessment.
3.	Tunnel Construction	Less than 1km in length	1 km in length and above



**REQUIREMENT PROJECTS FOR IEE & EIA (Continued)**

No	Type of Investment projects	IEE	EIA
4.	New highway construction or extension	Length of 2 km and above , less than 50 km	50 km and above
5.	Construction of Roads(national, regional/state/district and urban roads)	Length of 50 km and above , Less than 100 km	100 km and above
6.	Roads upgrade (national , regional/state/district and urban roads)	Length of 50 km and above	All projects which are stipulated by the Ministry that need to do environmental impact assessment.



## ENVIRONMENTAL IMPACT ANALYSIS

### Analysis Of Alternatives

- Natural environment, Residents, Waterway

### Pollution Control

- Actual Measurement of Ambient Air Quality
- Waste

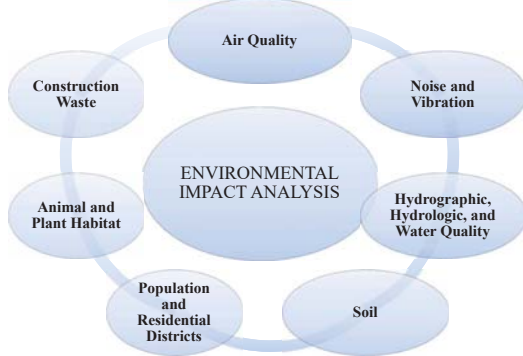
### Natural Environment

- Topographic Features of Yangon City
- River System in Yangon City
- Climate and Weather
- Biota and Ecosystem

### Social Environment

- Location of the project site

## ENVIRONMENTAL IMPACT ANALYSIS



## Environmental Description of Dala Bridge

### Myanmar National Environmental Quality (Emission) Guidelines (2015)



#### Lan Madaw Township

- Latitude 16 -46' -44.75" (North)
- Longitude 96 - 8' -51.19" (East)
- Above Sea Level (55 Ft)



Sr	Measurement	Unit	Emission level (Maximum)			Remarks
			Limit	Measurement Time	Result	
1	Carbon monoxide	mg/Nm <sup>3</sup>	100	24 hr	272.5	Over Limit
2	Nitrogen dioxides	mg/Nm <sup>3</sup>	200	1 hr	75	Within Limit
3	Sulfur dioxide	µg/m <sup>3</sup>	20	24 hr	2.7	Within Limit
4	Particulate matter PM <sub>10</sub>	µg/m <sup>3</sup>	50	24 hr	32	Within Limit
5	Particulate matter PM <sub>2.5</sub>	µg/m <sup>3</sup>	25	24 hr	23	Within Limit

## Environmental Description of Dala Bridge

### Myanmar National Environmental Quality (Emission) Guidelines (2015)



#### Dala Township

- Latitude 16 -46' -44.75" (North)
- Longitude 96 - 8' -51.19" (East)
- Above Sea Level (55 Ft)



Sr	Measurement	Unit	Emission level (Maximum)			Remarks
			Limit	Measurement Time	Result	
1	Carbon monoxide	mg/Nm <sup>3</sup>	100	24 hr	204.2	Over Limit
2	Nitrogen dioxides	mg/Nm <sup>3</sup>	200	1 hr	48.8	Within Limit
3	Sulfur dioxide	µg/m <sup>3</sup>	20	24 hr	5.07	Within Limit
4	Particulate matter PM <sub>10</sub>	µg/m <sup>3</sup>	50	24 hr	33.5	Within Limit
5	Particulate matter PM <sub>2.5</sub>	µg/m <sup>3</sup>	25	24 hr	24.27	Within Limit

## ENVIRONMENTAL OVERVIEW

**Natural**

- River flow discharge: Hlaing river maximum flow discharge is 1851 m<sup>3</sup>/s
- Highest High Water Level is +6.74m
- Floods in Yangon: River flood, Localized floods in urban area, Floods due to cyclone and storm surge

**Climate**

- Maximum 39.1 C
- Minimum 13.8 C

**Water Quality**

- Maximum value of Turbidity is 45 NTU

**Rainfall**

- Mean annual rainfall is 2749 mm
- Maximum monthly rainfall is 591mm
- Minimum mean monthly rainfall is 59mm

**National Parks and Preservation on Zones**

- Kandawgyi National Park
- Hlawga Natural life Park

**Air Quality**

- NO<sub>2</sub> and SO<sub>2</sub> level are well below the WHO guide line.

## Environmental Description of Dala Bridge

### Study Area



## Environmental Description of Dala Bridge

### Myanmar National Environmental Quality (Emission) Guidelines (2015)

#### (Water Pollution Level) Before & During Construction

Sr	Measurement	Unit	Maximum Limit
1	pH	S.U.a	6-9
2	Total suspended solids	mg/l	50
3	Total Nitrogen	mg/l	10
4	Chemical oxygen demand (COD)	mg/l	125
5	Biological oxygen demand (BOD)	mg/l	30
6	Oil and grease	mg/l	10
7	Total coliform bacteria	100 ml	400
8	Total phosphorus	mg/l	2

## Environmental Description of Dala Bridge

### Myanmar National Environmental Quality (Emission) Guidelines (2015)

#### (Water Pollution Level) During Construction

Sr	Measurement	Unit	Maximum Limit	Sr	Measurement	Unit	Maximum Limit
1	pH	S.U.a	6-9	15	Oil and grease	mg/l	10
2	Total suspended solids	mg/l	50	16	Sulfide	mg/l	1
3	Temperature	°C	-3 Degree Differential	17	Silver	mg/l	0.5
4	Fluoride (F)	mg/l	20	18	Cyanide (free)	mg/l	0.1
5	Arsenic (As)	ppm/ppb	0.1 ppm/100 ppb	19	Cyanide (total)	mg/l	1
6	Ammonia (NH <sub>3</sub> )	mg/l	10	20	Total coliform bacteria	100 ml	400
7	Chemical oxygen demand (COD)	mg/l	250	21	Phenol	mg/l	0.5
8	Biological oxygen demand (BOD)	mg/l	50	22	Cadmium	mg/l	0.1
9	Iron	mg/l	3.5	23	Selenium as Se	mg/l	0.1
10	Copper(Cu)	mg/l	0.5	24	Chromium (VI) as Cr <sup>6+</sup>	mg/l	0.5
11	Lead (Pb)	mg/l	3.5	25	Total phosphorus	mg/l	2
12	Nickel	mg/l	0.5	26	Heavy Metals(total)	mg/l	10
13	Chromium (hexavalent)	mg/l	0.1	27	Zinc	mg/l	2
14	Chromium (total)	mg/l	0.5	28	Chlorine (total residual)	mg/l	0.2

### Environmental Description of Dala Bridge

#### Myanmar National Environmental Quality (Emission) Guidelines (2015)

Sr	Location	
	Latitude	Longitude
1	16 46' 3.81" (North)	96 8' 56.95" (East)
2	16 46' 7.52" (North)	96 8' 48.83" (East)
3	16 46' 9.86" (North)	96 8' 37.30" (East)
4	16 46' 10.77" (North)	96 8' 21.95" (East)
5	16 46' 9.99" (North)	96 8' 9.77" (East)
6	16 45' 58.83" (North)	96 7' 48.64" (East)
7	16 45' 49.96" (North)	96 8' 34.47" (East)



ရေအရင်းအမြစ်အား စနစ်ကျ ပြုသိမ်းပေးရန်အတွက် တိုင်းတာရန်

### Environmental Description of Dala Bridge

#### Water Quality Appraisal ( Measure At August 2016)

No.	Parameter	Method	Unit	Water Quality Result							Std.	Guideline	Remarks	Myanmar Standard
				P1	P2	P3	P4	P5	P6	P7				
2	Turbidity	2100P Turbidity Meter (HACH) / 2100Q Turbidity Meter (HACH) / Instrumental Analysis	NTU	521	546	530	528	426	518	52	5	WHO (Drinking Water)	Much greater than the standard	10 (General)
4	Suspended Solids	8370P Spectrophotometer (HACH) / Gravimetric Method	mg/l	286	292	301	289	265	298	58	50	MM	Greater than the standard	50 (ppm)
10	Dissolved Oxygen (DO)	USA Standard Method 22nd Ed. direct Azide Modification of Iodometric Method	mg/l	5.8	6.2	6.0	6.6	6.0	5.8	3.2		DOTech	Greater than the standard	River (≥ 6.0) / Lake (≥ 5.0)(General)
15	Lead (Pb)		mg/l	0.51	0.66	0.55	0.87	0.79	0.72	0.13	0.01	WHO / MM	Greater than the standard	0.2 mg/L / 0.1 mg/L
16	Nickel		mg/l	0.8	1.01	0.72	1.07	1.04	0.9	0.25	0.02	WHO	Greater than the standard	0.02 mg/L / 0.5 mg/L
17	Chromium (Cr)	ALPHA	mg/l	0.08	0.09	0.21	0.11	0.14	0.13	0.09	0.05	WHO	Greater than the standard	0.05 mg/L / 0.5 mg/L
26	Manganese	Inductively Couple Plasma	ppb	5.2	4.76	0	0.59	2.16	2.21	0	10	MM	Greater than the standard	0.01 mg/L

**Remarks**

P1-P6 = Samples of River Water  
P7 = Samples of Lake Water(Dala)

### Environmental Description of Dala Bridge

#### Noise Level Appraisal ( Measure At September 2016)

##### Lan Madaw Township

Point	Location		Noise Level		Remarks
	Latitude	Longitude	Day Time	Night Time	
			(7:00 - 22:00) (55 dB)	(22:00 - 7:00) (45 dB)	
1	14 46' 45.07" ( North)	96 8' 51.63" (East)	63.88 dB	56.92 dB	Over Limit
2	14 46' 39.9" ( North)	96 8' 41.7" (East)	64.30 dB	56.54 DB	Over Limit
3	16 46' 33.06" ( North)	96 8' 31.58" (East)	61.37 dB	59.07 dB	Over Limit
4	16 46' 43.53" ( North)	96 8' 32.41" (East)	60.05 dB	53.97 dB	Over Limit
5	16 46' 25.45" ( North)	96 8' 41.44" (East)	57.46 dB	53.97 dB	Over Limit



### Environmental Description of Dala Bridge

#### Noise Level Appraisal ( Measure At September 2016)

##### Dala Township

Point	Location		Noise Level		Remarks
	Latitude	Longitude	Day Time	Night Time	
			(7:00 - 22:00) (55 dB)	(22:00 - 7:00) (45 dB)	
1	16 45' 51.75" ( North)	96 8' 35.95" (East)	59.76 dB	52.93 DB	Over Limit
2	16 45' 52.46" ( North)	96 8' 46.75" (East)	58.88 dB	55.45 DB	Over Limit
3	16 45' 39.22" ( North)	96 8' 33.71" (East)	60.54 dB	58.93 dB	Over Limit
4	16 45' 42.61" ( North)	96 8' 45.31" (East)	60.24 dB	54.63 dB	Over Limit
5	16 45' 49.69" ( North)	96 8' 24.04" (East)	62.24 dB	56.37 dB	Over Limit



### Environmental Description of Dala Bridge

#### Myanmar National Environmental Quality (Emission) Guidelines (2015)

#### Noise Level

Situation	National Level -(dBA)	
	Day Time (07:00 - 22:00) (10:00 - 22:00) (During Public Holiday)	Night Time (22:00 - 07:00) (2:00 - 10:00) (During Public Holiday)
	Residential , Social & Educational Buildings	55
Industrial Zone & Business Area)	70	70

### Environmental Description of Dala Bridge

#### Vibration Level Guidelines for Construction(Japan)

Restriction	Scope	Remarks	Scope Stipulation
Vibration Level	(1) (2)	85 dB	
Prohibited Time	(1)	Evening 7:00 - Morning 7:00	
	(2)	Night 10:00 - Morning 6:00	
Maximum Working Time	(1)	10 hr per day	
	(2)	14 hr per day	
Maximum Working Day Per Week	(1) (2)	6 days	Residential Quarter & Silent Area
Prohibited Day	(1) (2)	Sunday & Official Holiday	Industrial Zone & Business areas

**Remarks**

(1)Residential , Silent Area , Industrial Zone including residential , Business Zone ,Schools , Hospitals ,Religious Buildings  
(2)Settlement and Live Environment

### Environmental Description of Dala Bridge

#### Noise Level Appraisal ( Measure At September 2016)



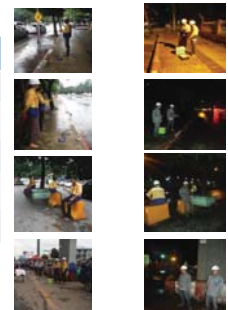
### Environmental Description of Dala Bridge

#### Vibration Level Appraisal ( Measure At September 2016)

##### Lan Madaw Township

Point	Location		Vibration	
	Latitude	Longitude	Morning (85 dB)	Night (85 dB)
1	14 46' 45.07" ( North)	96 8' 51.63" (East)	75.3 dB	67.0 dB
2	14 46' 39.9" ( North)	96 8' 41.7" (East)	83.2 dB	65.4 dB
3	16 46' 33.06" ( North)	96 8' 31.58" (East)	66.2 dB	57.5 dB
4	16 46' 43.53" ( North)	96 8' 32.41" (East)	117.3 dB	71.5 dB

Strand Road



## Environmental Description of Dala Bridge




### Vibration Level Appraisal (Measure At September 2016)

Dala Township

Point	Location		Vibration	
	Latitude	Longitude	Morning (85 dB)	Night (85 dB)
1	16 45' 52.46" (North)	96 8' 46.75" (East)	73.0 dB	59.0 dB
2	16 45' 42.61" (North)	96 8' 45.31" (East)	63.1 dB	65.4 dB
3	16 45' 51.75" (North)	96 8' 35.95" (East)	72.1 dB	63.0 dB
4	16 45' 39.22" (North)	96 8' 33.71" (East)	67.6 dB	69.2 dB



### Environmental Issues(Noise, Air Pollution etc.)

Temporary Safety Fence	Sprinkler Truck	Noise Barrier
		
<ul style="list-style-type: none"> <li>Improve Streetscape during construction</li> <li>Reduce fugitive dust and noise</li> </ul>	<ul style="list-style-type: none"> <li>Reduce Fugitive dust</li> </ul>	<ul style="list-style-type: none"> <li>Improve streetscape using the designed noise barrier</li> <li>Reduce noise</li> </ul>

### Environment mainstream: Key constraints

- Critical constraints** : Lack of political will, development vision, understanding and awareness, data and information, institutional skill and capacity
- Common issues**: Lack of human resources, funding, methodology and tools, fragmentation of environmental responsibilities
- Others**: Personal short term interest, over regulated and complicated legislation

Challenge	Cause	Action	Responsible Organization	Time Frame
Gaps bet JICA guidelines & Myanmar Laws	Lack of experience and knowledge	Improvement of National Legislation	MONREC	Long time
Insufficient Public Review	Lack of experience and knowledge	Sharing the experience by doing workshops, seminars	MONREC Executing Ministry (MOC,MOEE..etc)	Short time Long Time
Insufficient Public Involvement	Lack of Education EIA report is not open	Publication of EIA report at public places	MONREC Executing Ministry (MOC,MOEE..etc)	Short time Long Time
Lack of Monitoring	Lack of Budget	Urging to higher Officials and it should include in the project cost	MONREC Executing Ministry (MOC,MOEE..etc)	Short time Long Time

### STAKEHOLDER MEETINGS

#### Objectives of the Meeting

Environmental Conservation Department under Ministry of Environmental Conservation and Forest (MOECF) and Public Works has concluded to conduct twice local level stakeholder meeting for this EIA process based on draft EIA process in Myanmar Government and JICA Guidelines for Environmental and Social Consideration (2010).

Main objectives for holding local stakeholder meeting are shown below;

- ✓ To disclose objectives of the project and its components and activities
- ✓ To inform environmental and social adverse and positive impacts
- ✓ To exchange opinions regarding project and environmental issues
- ✓ To have basic consensus regarding project

### CONCLUSION

- Environmental Impact Assessment (EIA) Procedure have been prepared, detailing out the procedural aspects and implementation responsibilities.
- Myanmar is also developing its Green Economy Strategic Framework again with associated action plans.
- Work has also commenced on preparation of corresponding Environmental Quality Standards, as required under the ECL and EIA technical guidelines.
- One of the 'least developed countries' (an 'LDL'), existing technological, financial and capacity gaps limit Myanmar's ability to achieve its vision for sustainable development while balancing socio-economic development with environmental sustainability.
- Myanmar requires significant support from the international community for Capacity building, technology development and transfer and financial resources to build up the country.

State Holder Meeting of Gyaing Kawkareik Bridge Construction



State Holder Meeting of Dala Bridge Construction



**THANK YOU  
FOR YOUR ATTENTION**

THE PROJECT FOR **C**APACITY ENHANCEMENT ON **E**NVIRONMENTAL AND **S**Ocial **C**ONSIDERATIONS IN IMPLEMENTING AGENCY IN **R**OAD SECTOR IN THE KINGDOM OF CAMBODIA

## Overall of CESCO Project

3<sup>rd</sup> Country Technical Exchange  
25<sup>th</sup> October, 2017, Nay Pyi Tawi in Myanmar

Mr. ITO Tsuyoshi  
ESC/EIA/EMP Expert, JICA Project Team

## Project Outline

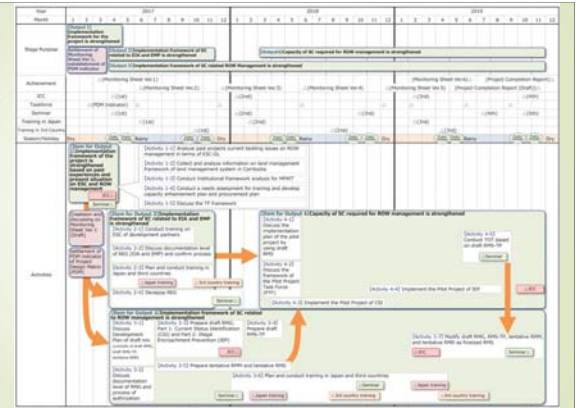
<b>Overall Goal</b>	ESC in road sector is implemented properly by MPWT.
<b>Project Purpose</b>	Capacity of MPWT officials on ESC is enhanced through applying <b>REG</b> and <b>RMS</b>
<b>Output 1</b>	Implementation framework for the project is strengthened based on past experiences and present situation on ESC and ROW management.
<b>Output 2</b>	Implementation framework of EC related to <b>EIA</b> and <b>EMP</b> is strengthened.
<b>Output 3</b>	Implementation framework of SC related to ROW management is strengthened by establishing <b>RMS</b>
<b>Output 4</b>	Capacity of SC required for ROW management is strengthened through OJT.

Note: **REG**: Road Environment Guideline, **RMS**: ROW Management System, **EIA**: Environmental Impact Assessment, **EMP**: Environmental Management Plan

## Contents of Presentation

- Basic Information of the Project
- Project Outline
- Project Organization and Members
- Past Main Events related to EIA/EMP Team
- Main Progress and Schedule of EIA/EMP Team
- Main Events related to EIA/EMP Team in the Near Term
- Planned Detail Schedule for REG Development
- Table of Contents of Draft REG
- Expecting Items to be discussed on this Technical Exchange

## Proposed Flowchart of the Project



## Basic Information of the Project

- ESC has become crucial condition for smooth and appropriate implementation of road infrastructure projects.
- JICA's **TCP-COR** focused on BRP with MEF and MPWT was successfully completed on 2012.
- However MPWT officials are needed to be strengthened technical capacities to implement EIA Process in Road Sector appropriately with MoE officials.
- Also, insufficient management of ROW causes illegal occupation of ROW and re-compensation of resettlement, etc.
- The Detail Planning Survey had carried out in 2015 and **R/D** had signed in February 29, 2016.

Note: **ESC**: Environmental and Social Considerations, **TCP-COR**: Technical cooperation Project on Capacity Enhancement of ESC for Resettlement, **BRP**: Basic Resettlement Procedures, **R/D**: Record of Discussion

## Outputs Generated Through the Project Activities

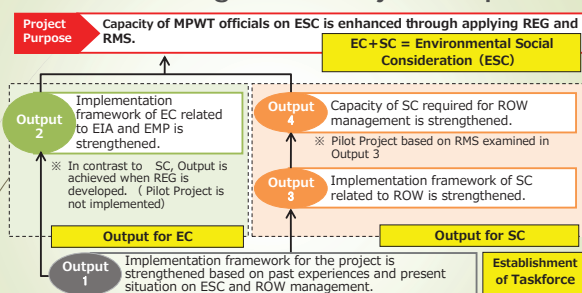
### Road Environmental Guidelines (REG): Output 2

- Environmental Impact Assessment (EIA)
- Environmental Management Plan (EMP)

### ROW Management System (RMS): Output 3

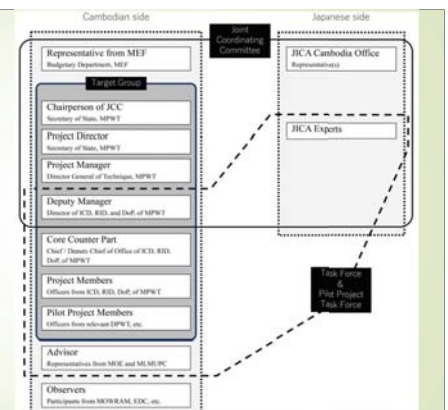
- ROW Management Guidelines (RMG)
  - Part 1: Current Status Identification (CSI)
  - Part 2: Illegal Encroachment Prevention (IEP)
- RMS Training Plan (RMS-TP)
- ROW Management Map (RMM)
- ROW Management Database (RMD)

## Schematic Design of the Project Outputs



Note: The resettlement/Land Acquisition issues, e.g. compensation, detailed measurement survey, resettlement cost survey, etc. are not included in the contents of the Project.

## Project Organization



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Target Group (MPWT Personnel) **as of February 2017**

Assignment	Name	Position
Project Director	H.E. Tauch Chankosal	Secretary of State
Project Manager	H.E. Nou Vaddhanak	DG, General Department of Technique
Deputy Manager	Mr. Chhim Phalla	Director, ICD
<b>EIA/EMP Team</b>		
Deputy Manager	Mr. Chreang Phollack	Director, DOP
Taskforce Member	1. Mr. Prok Novida	Deputy Director, DOP
	2. Mr. Uk Raksmeay	Chief, Social and Environmental Office, DOP
	3. Mr. Uy Sambath	Deputy Chief, Social and Environmental Office, DOP
	4. Mr. Srey Vireak	Officer, Social and Environmental Office, DOP
	5. Mr. Manh Vutha	Deputy Chief, Bilateral Cooperation Office, ICD
	6. Mr. Song Kimheng	Officer, Administrative Office, ICD
	7. Mr. Ngel Sovanarith	Officer, Bilateral Cooperation Office, ICD
<b>ROW Management Team</b>		
Deputy Manager	Mr. Heng Rathpiseth	Director, RID
Taskforce Member	1. Mr. You Dara	Deputy Director, RID
	2. Mr. Chea Samnang	Chief, ROW Management Office, RID
	3. Mr. Khai Saray	Deputy Chief, ROW Management Office, RID
	4. Mr. Hay Chandara	Deputy Chief, ROW Management Office, RID
	5. Mr. Sor Yilin	Deputy Chief, Regional Cooperation Office, ICD
	6. Mr. Peang Samoeun	Deputy Chief, Administrative Office, ICD
	7. Ms. Laing Sengkim	Officer, Multilateral and International Organization Cooperation Office, ICD

10

JICA Project Team

	Position	Name	Remarks
1.	Team Leader/ ROW Management 1	Dr. TSUCHIDA Takayuki	CTII
2.	Deputy Team Leader/ ROW Management 2	Mr. YAMASHITA Akira	ESIC
3.	ESC/ EIA/ EMP	Mr. ITO Tsuyoshi	CTII
4.	Land Management Framework 1	Mr. ISHIGE Hiroshi	CTII
5.	Land Management Framework 2/ Database Development	Mr. KIYOTA Daisaku	CTII
6.	Land and House Investigation 1	Mr. OCHI Masaki	CTII
7.	Land and House Investigation 2	(to be named)	CTII
8.	Training Plan and Implementation 1	Ms. NAKAYAMA Makiko	CTII
9.	Training Plan and Implementation 2	Mr. NISHIO Kyoichiro	HEX
10.	Institutional Analysis/ PCM	Ms. MIZUYORI Tomoko	CTII
11.	Project Coordinator/ Database Management	Mr. KUMAGAI Takahiro	CTII
12.	Monitoring/ Evaluation	Mr. ICHIKAWA Shunpei	CTII

Note: ROW: Right of Way, ESC: Environmental and Social Considerations, EIA: Environmental Impact Assessment, EMP: Environmental Management Plan, PCM: Project Cycle Management  
 CTII: CTI Engineering International Co., Ltd., ESIC: Environment and Social Infrastructure Consultant Co., Ltd., HEX: Hanshin Expressway Company Limited

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- ### Main Progress and Schedule of EIA/EMP Team
- Capacity Assessment concerning EIA and EMP was conducted for EIA/EMP Members on March, 2017.
  - Weekly EIA/EMP Technical Meetings are conducting from the end of March, 2017 for Capacity Development for EIA/EMP and Road Environmental Guideline (REG) Development for MPWT's Officials.
  - Table of Contents of Main Parts and Appendices of the Draft REG was developed by August, 2017.
  - It is planned that Draft REG will be developed by the end of December, 2017.
  - It is expected that the REG will be authorized as MPWT's Order (Prakas) by March, 2018.

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- ### Planned Main Events related to EIA/EMP Team in the Near Term
- 2<sup>nd</sup> Seminar  
 Expected Date: A half day in the end of January, 2018  
 Theme I: Presentation of Developed Draft REG  
 Theme II: Presentation of Progress Outputs for ROW Management
  - 2<sup>nd</sup> JCC Meeting  
 Expected Date: A half day in the beginning of February, 2018  
 Session I: Agreements of the Contents of Draft REG  
 Session II: Agreements of Progress of ROW Management

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JCC Member **as of February 2017**

Assignment	Name	Position
1. Chair Parson	H.E. Tauch Chankosal	Secretary of State, Ministry of Public Works and Transport (MPWT)
2. Member	H.E. Nou Vaddhanak	Director General of General Department of Technique, MPWT
3. Member	Mr. Chhim Phalla	Director of International Cooperation Department (ICD), MPWT
4. Member	Mr. Chreang Phollack	Director of Planning Department, MPWT
5. Member	Mr. Heng Rathpiseth	Director of Road Infrastructure Department (RID)
6. Member	(to be named)	Budgetary Department, Ministry of Economy and Finance (MEF)
7. Member	Representative(s)	JICA Cambodia Office
8. Member	Experts	JICA Project Team

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### Planned Detail Schedule for REG Development

Activities	Year 2017												Year 2018			
	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar				
2.1 Understandings of Main Concepts on Environmental Social Considerations (ESC)	■															
2.2 Understandings of Implementation Issues of MPWT to Involve EIA/EMP in Road Sector		■	■													
2.3 Confirmation of documentation level/authorizing process, supporting for authorization of the REG		■		■	■					■	■	■	■	■	■	■
2.4 Concrete trainings and discussions for development of the REG, revising the REG for authorization		■		■	■				■	■	■	■	■	■	■	■
2.5 Training in Japan and third Country in Myanmar			■						■							
2.6 Presentation to disclose the Draft REG on 2 <sup>nd</sup> Technical Seminar																▲

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- ### Past Main Events related to EIA/EMP Team
- 1<sup>st</sup> JCC Meeting and 1<sup>st</sup> Seminar  
 Implementation Date: 4<sup>th</sup> May, 2017  
 Session I: Agreements for Documentation Level of REG and RMG  
 Session II: ROW Management Presentation  
 1<sup>st</sup> Seminar was jointly held at same day with JCC  
 Theme I: Environmental Considerations  
 Theme II: ROW Management
  - Japan Training  
 Implementation Date: June 13 to 22, 2017 (10 days)  
 Expected Participants: Management Level in charge of EIA and ROW from MPWT and MoE (10 persons)
- Note: REG: Road Environmental Guideline, RMG: ROW Management Guideline

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- ### Table of Contents (TOC) of Draft REG (1/2)
- #### Main Parts
- Backgrounds
    - Objectives, Users and Scope of the Guideline
    - Road Development Project Cycle and the EIA
  - Essential Related Laws/Guidelines of EIA in Cambodia
    - Essential Laws and Prakas of EIA in Cambodia
    - Essential Guideline of EIA in Cambodia
  - Present EIA Process in Cambodia
    - Present Whole EIA Process in Cambodia
    - Involvement phases by MPWT for Whole EIA Process in Cambodia
  - Practical Involvement Methods by MPWT for Whole EIA Process in Cambodia
    - EIA Report Preparing Phase
    - EIA Report Reviewing Phase
    - Project Monitoring Phase
      - Reviewing (Verifying) Environmental Management Plan (EMP)
      - Reviewing (Verifying) Environmental Monitoring Plan (EMoP)
      - Reviewing (Verifying) Environmental Monitoring Report (EMOR)

## Table of Contents (TOC) of Draft REG (2/2)

### Appendices

- Appendix 1: Checklist for Reviewing EIA Report in Road Sector
- Appendix 2: Checklist for Reviewing EMP in Road Sector
- Appendix 3: Checklist for Reviewing EMoP in Road Sector
- Appendix 4: Checklist for Reviewing EMoR in Road Sector
- Appendix 5: Common Weakness and Good Practices in EIA Reviewing

### References

- Reference 1: A Sample of EMP in Road Sector
- Reference 2: A Sample of EMoP in Road Sector
- Reference 3: A Sample of EMoR in Road Sector
- Reference 4: A Sample of Environmental Monitoring Form in Road Sector
- Reference 5: Essences of Environmental Sampling (Air, Water, Noise) Methods in Road Sector
- Reference 6: Essences of Environmental Impacts Evaluation Methods in Road Sector

## Expecting Items to be discussed on this Technical Exchange

- Sharing Information and Understandings for Each EIA System/Process in Myanmar and Cambodia
- Sharing Information Understandings for Each EIA Implementation Issue as Each Ministerial Project Owner
- Sharing Information Understandings for Each EIA Implementation Issue as Each Authorized Agency
- Proposals to improve the Implementation Issues based on each present situations.

**Kingdom of Cambodia  
Nation Religion King**

Royal Government of Cambodia  
Ministry of Public Works and Transport

**Tasks and the Implementation Issues of  
MPWT  
for  
EIA Road Sector in Cambodia**

*Environmental Consideration*

Myanmar, 25 October 2017  
Present by Mr. SREY Vireak,  
ESO, DoP, DGPP, MPWT



The Project for Capacity Enhancement on  
Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

**Part I. Overview of MPWT (...)**

Duties and Responsibilities of MPWT

- Developing national policy for public works and transport
- Establishing the relevant principles, laws and regulations associated with public works and transport
- Cooperating with diverse organizations to develop the country's transport infrastructure
- Building, maintaining and managing all national and provincial roads, bridges, ports, railways and waterways

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Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

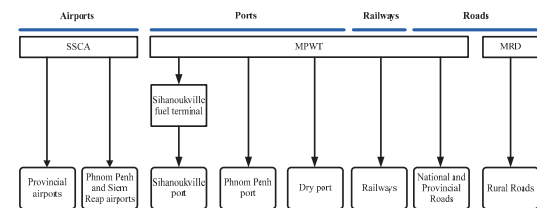
**Contents**

- Part 0. Cambodia at a glance
- Part I. Overview of MPWT
  - MPWT Organizational Chart
  - Role and Responsibilities of MPWT
  - Transport Infrastructure in Cambodia
- Part II. Overview of Department of Planning (DoP)
  - DoP Organizational Chart
  - Role and Responsibilities of ESO, DoP, DGPP, MPWT
- Part III. EIA/EMP related to MPWT's Transport Infrastructure Project
  - MPWT's Implementation Issues to EIA/EMP Process in road sector
  - Current Implementation/ Environmental Measures
  - Issues
- Part IV. Conclusion
  - Challenges
  - Area of Improvement for the implementation issues

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Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

**Part I. Overview of MPWT (...)**

Transport Infrastructure in Cambodia



Note:  
SCA = State Secretariat of Civil Aviation  
MPWT = Ministry of Public Works and Transport  
MRD = Ministry of Rural Development

Figure 1: Cambodia's Transport infrastructure management and development

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Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

**Part 0. Cambodia at a glance**

- Total area: 181,035 m<sup>2</sup>
- Population: 14.7 million
- GDP Growth rate: around 7% in 2016 and 2017
- GDP per capita: USD 1,422
- Main sectors contributing to country's economic development;
  - ✓ Agriculture
  - ✓ Industry
  - ✓ Services
- Transport infrastructure plays vital role in economic and social development in Cambodia



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Environmental and Social Considerations in Implementing Agency in Road Sector

**Part I. Overview of MPWT (...)**

Transport Infrastructure in Cambodia

Road

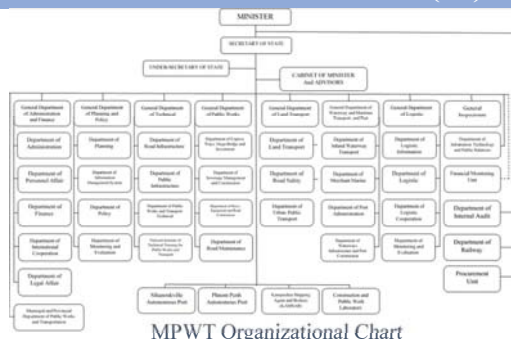
- Road Classification:
- 1-digit national road
  - 2-digit national road
  - 3,4-digit provincial road
  - Rural road



Figure 2: International highway (ESCAP, GMS & AH) (Source: MPWT)

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Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

**Part I. Overview of MPWT (...)**



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**Part I. Overview of MPWT (...)**

Transport Infrastructure in Cambodia

Railway

Existing lines

1. Northern line:
  - PNH-Sisophon (338km)
2. Southern line:
  - PNH-SHV (264km)

Missing lines

1. Northern line:
  - Poi Pet-Sisophon (48km)
2. Eastern line:
  - PNH-Lock Ninh (255km)



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Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)



## Part I. Overview of MPWT (...)

### Transport Infrastructure in Cambodia

#### Maritime and Waterway

##### Two autonomous ports:

1. SHV port
2. PHN port

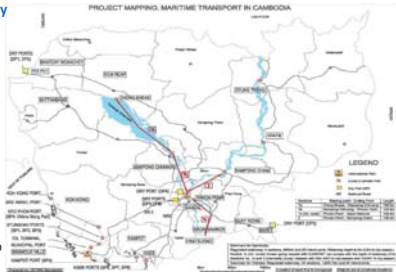
These handle international containers

##### Other small ports:

1. Koh Kong port
2. Sre Ambil port
3. Kampot port

##### Waterway transport:

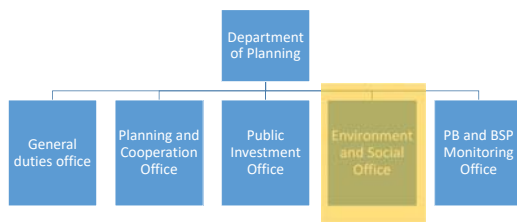
1. Mekong river
2. Network of Tonle Sap
3. Basac River
4. Other tributaries



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## Part II. Overview of Department of Planning

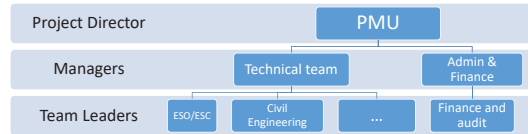
### DoP Organizational Chart



The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

## Part III. EIA/EMP related to MPWT's Transport Infrastructure Project

- In general, Project Implementation is carried out through special unit (PMU), led by a secretary of state as a Project director
- Establishing a PMU is made in a separate Prakas (declaration) by minister and it will become an ineffective once the project is closed upon the project's lifetime.
- Technical members of PMU are recruited from relevant departments upon the skill and/or duties/responsibilities.



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## Part III. EIA/EMP related to MPWT's Transport Infrastructure Project (...)

### ❖ MPWT's Implementation Issues to EIA/EMP Process in (1) Preparing EIA/EMP Report Road Sector

- ESO, DoP involved partly or less in the EIA/EMP report preparation phase
- Limitation of capacity in EIA/EMP report preparation

#### (2) Reviewing EIA Report

- Lack of Technical capacities and resources for reviewing the IEIA/EIA report
- Lack of sector guidelines for IEIA/EIA in Cambodia to review the IEIA/EIA Report.
- No external EIA review system to seek for some advises from external experts, besides review conducted by MoE, Line ministries (MPWT, etc.).
- Inter-agency coordination and consultation are insufficient

#### (3) EMP/EMoP/Environmental Monitoring Report preparation

- Existing EMP content/template is too high standards, or unrealistic to conduct the EMP in Cambodia context (Follow ADB or World Bank guideline which requires too high standard)
- EMP/EMoP Report and reporting mechanism have yet set template and procedure to be carried out.

The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR) 14

## Part II. Overview of Department of Planning (...)

### Duties and Responsibilities of ESO, DoP, DGPP, MI

#### Environmental Aspects

1. Involving in EIA report preparation of development projects under public works and transport
2. Reviewing, monitoring and reporting about implementation of framework of environmental management or Environmental Management Plan (EMP) on transport infrastructure construction, rehabilitation and maintaining project to ensure that implementation of all these projects comply with existing principles of environmental management;
3. Delivery dissemination, trainings, and activities associated with climate change project under public works and transport
4. Involving in study, preparation of policies, principles, plan and activities plan on the implementation of resettlement of the impacts, caused by development projects of public works and transport
5. Involving in review documents of construction, rehabilitation and maintaining projects to ensure that environmental safety plan will be integrated into framework and Environmental Management Plan (EMP);
6. Monitoring environmental impacts caused by activities of transport infrastructure construction, rehabilitation and maintaining projects;

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## Part II. Overview of Department of Planning (...)

### Duties and Responsibilities of ESO, DoP, DGPP, MI

#### Social Aspects

1. Involving in studying and planning for addressing all impacts caused by projects associated to transport infrastructure construction, rehabilitation and maintaining;
2. Involving in studying and impacts assessment on properties, land and house of local people caused by transport infrastructure construction, rehabilitation and maintaining projects;
3. Involving preparing a report on Detail Measurement Surveys(DMS) and results of solving transport infrastructure construction, rehabilitation and maintaining projects-related impacts;
4. Conducting a study on economic benefits return when transport infrastructure construction, rehabilitation and maintaining projects are ended;
5. Collecting and documentation of relevant documents associated with environment and social issue
6. Involve in preparation and cooperation the social works and associated disasters under the public works and transport
7. Other tasks/duties assigned by the Director of department.

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## Part III. EIA/EMP related to MPWT's Transport Infrastructure Project (...)

### ❖ MPWT's Implementation Issues to EIA/EMP Process in Road Sector

- Project's contractors sometimes are not well aware of EMP, including proposed mitigation measures and monitoring activities.
- ESO, or DoP rarely receives EMoP report from contractor for review
- Lack of validation and use/effectiveness of Environmental Monitoring Results due to insufficient technical knowledge/skills for checking the results.

#### (4) Other basic constraints

- Lack of assignment of ESC for Environment and Social Office, DoP in the PMU
- Human Resources Constraints  
MPWT staff, who is in charge for EIA related tasks, are still need more technical persons for reviewing and providing comments on EIA Report, EMP/EMoP, and Environmental Monitoring Report.
- Budgetary Constraints  
Site visits for reviewing EIA, which MPWT mandates are often not possible due budgetary constraints.

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## Part III. EIA/EMP related to MPWT's Transport Infrastructure Project (...)

### ❖ Current Implementation/ Environmental Measures

- ✓ Requirement of road project for conducting EIA, a road length of > 100 km
- ✓ Bridges
- ✓ Donor based- requirements, a road length less than 100 km



The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR) 16

Part III. EIA/EMP related to MPWT's Transport Infrastructure Project (...)

❖ Current Implementation/ Environmental Measures



The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR) 17

Part III. EIA/EMP related to MPWT's Transport Infrastructure Project (...)

❖ Current Implementation/ Environmental Measures



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Part III. EIA/EMP related to MPWT's Transport Infrastructure Project (...)

❖ Environment issues-related to transport and transport infrastructure development

- ☐ Transportation issues
  - ✓ Traffic congestion in major cities (PHN)
  - ✓ Lack of side-walk
  - ✓ Venders' encroachment on RoW
  - ✓ Illegal encroachment of urban poor residents
  - ✓ Motorization of second-hand vehicles
  - ✓ Insufficient of public transport infrastructures in major cities
  - ✓ Insufficient of road assets
- ☐ Transport Infrastructure Construction issues
  - ✓ Noise and air pollution
  - ✓ Solid and waste water resulting from road construction
  - ✓ Road safety
  - ✓ Borrow pit safety

The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR) 19

Part IV. Conclusion

❖ Challenges

- Limitation of law enforcement (agreement btw contractor and gov't)
- Lack of some legal documents and regulations
- Lack of financial and human (skill/professional) resources
- Lack of database and data management system
- Lack of technologies for noise and air pollution management and mitigation
- Monitoring and/or inspection activities are still limited
- Staffs turn over
- Reporting mechanism is complicated and time consuming

The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR) 20

Part IV. Conclusion (...)

❖ Area for improvement of the implementation issues

1. Strengthening technical knowledge/skills for MPWT staffs, who are involved in reviewing the following report/plan;
  - EIA Report
  - Environmental Management Plan (EMP)
  - Environmental Monitoring Plan (EMoP)
  - Environmental Monitoring Report
3. MPWT Prepares and authorizes a "Practical Road Environmental Guidelines in Road Sector in Cambodia" to integrate and conduct more effectively the EIA/EMP related activities within the MPWT officials, in compliance with the EIA related laws/guidelines of MoE, Cambodia.
4. Applying the "Practical Road Environmental Guidelines in Road Sector in Cambodia" to real projects and monitoring the practices of the Guidelines under cooperation with MoE.
2. ESO, DoP should be included in each PMU to carry out the projects associated to environment and social aspect.

The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR) 21



Thanks for your attention!





## Infrastructure Development Project in Thilawa Area Phase II (Access Road Project)

Ei Ei Myo  
Deputy Director  
Department of Highways

25 October 2017

1

### Outlines of Presentation

#### I. General Description of the Project

- (1) Introduction
- (2) Proposed Road Design

#### II. Environmental and Social Consideration of the Project

- (1) Introduction
- (2) Right-of-Way Declaration by MOC
- (3) Cut-off-Date
- (4) Survey Purpose and Methodology
- (5) Result of Census and Inventory survey
- (6) Draft Eligibility List
- (7) Assistance for Moving Cost
- (8) Proposed Organization to Settle the Difficulties of Relocation and Assistance for Moving Cost in the future
- (9) About Abbreviated Relocation Action Plan (A-RAP)

2

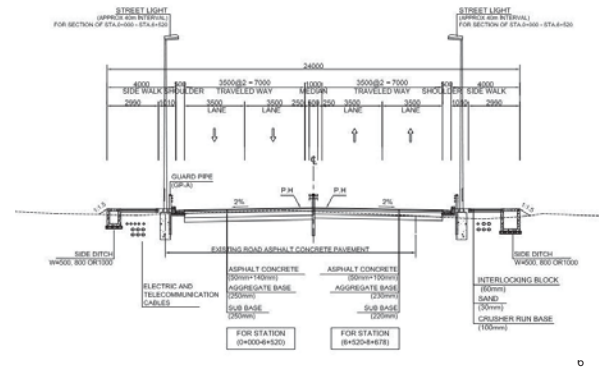
### 2) Proposed Road Design - General Description

#### General Specifications of Proposed Road

-Road Length	8.7 km (widening and reconstruction)
-Lane Width	3.5 m of Each (4 lanes)
-Sidewalk	4m on both sides under which drainage and utility will be installed.
-Traffic Signal (4 places)	Traffic Signals Installation
-Street Lighting	Thanlyin bridge to Kyeik Khauk Pagoda Junction (6.5 km in length, Lampposts- both sides with an interval of 40 m, underground cable)
-Telecommunication-	Copper Cables 10.0 km in total (underground type) Optical Fiber Cables: 89.1 km in total (underground cable)
-Bridge Widening and Reconstruction-	1 places
-Culverts (New construction)-	box culvert (9 numbers) and pipe culvert (5 numbers)
-Bus Stop	10 places

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### 2) Proposed Road Design – Standard Section



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## I. General Description of Project

3

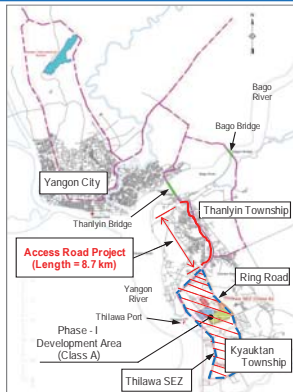
### 1). Introduction

#### General

The Thilawa Special Economic Zone is the first Special Economic Zone (SEZ) built in Myanmar, and had become fully (commercially) operational in September 2015. As the existing 2 lane access road, starts from Thanlyin bridge to the junction of Maritime University, will reach to the traffic capacity due to the fully operation of the Class A industrial area, The Access Road Project, of which length is 8.7 km, starts at the connection point of this ring road and ends before the approaching point to Thanlyin Bridge.

#### Objective of the Project

- The objectives of Access Road Project are;
- To secure safe and smooth traffic between Yangon City and Thilawa SEZ by expanding (widening) the existing access road to 4 lanes, and
  - To enhance direct foreign investments on Thilawa SEZ and to contribute the economic development and employment generation in Yangon Metropolitan Area.
  - To support the regional development of the Thanlyin Township area

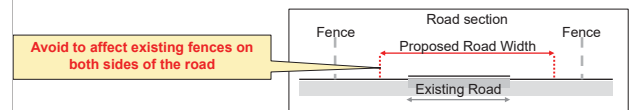


Location Map of the Access Road

### 2). Proposed Road Design –Basic Policy

#### Basic Policy

- Layouts and alignments of the road to taken into account of existing structures.
- Avoid to affect existing structures as much as possible
- Adjustment, especially for "control points" such as existing historical religious structures along the project road.



Control Points



7

### 2) Proposed Road Design- Samples of Adjustment at Control Points



## II. Environmental and Social Consideration

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### 1). Introduction

As the project is the Japanese ODA Loan Project,

- The project proponents, MOC (in case of this project) has to take into account not **only design and construction but also the environmental and social considerations.**
- According to the JICA environmental and social guidelines, if there will be small scale resettlement, a project proponent is required to prepare Abbreviated Resettlement (or Relocation) Action Plan (**A-RAP**).
- MOC has prepared the Abbreviated Relocation Action Plan (**A-RAP**) to minimize the impacts on the society/ project affected households (PAHs).
- After the preparation of A-RAP, MOC will carry out the resettlement of the Project implementation in consideration to comply with the JICA guidelines and Myanmar Highway Law of Right-of-Way.

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### 2) Right-of-Way Declaration by MOC

On 17<sup>th</sup> July, 2015, MOC officially declared the Right-of-Way of the road managed by the DOH, MOC in The New Light of Myanmar newspaper.

အမှတ်	လမ်းအမျိုးအမည်	လမ်းအလျဉ်း	ပမာဏ
1	ထန်လှိုင်-ထီးလား (Thailawa Access Road)	122.70 (40263)	14.00 MOORE LAMPAE
2	ထန်လှိုင်-ထီးလား (Thailawa Access Road)	132.00 (43650)	14.00 MOORE LAMPAE
3	ထန်လှိုင်-ထီးလား (Thailawa Access Road)	70.00 (2307)	14.00 MOORE LAMPAE
4	ထန်လှိုင်-ထီးလား (Thailawa Access Road)	46.76 (15289)	14.00 MOORE LAMPAE
5	ထန်လှိုင်-ထီးလား (Thailawa Access Road)	46.76 (15289)	14.00 MOORE LAMPAE
6	ထန်လှိုင်-ထီးလား (Thailawa Access Road)	46.76 (15289)	14.00 MOORE LAMPAE
7	ထန်လှိုင်-ထီးလား (Thailawa Access Road)	303.00 (10003)	14.00 MOORE LAMPAE

- For the Thanlyin-Thilawa (project) Road, the width of the Right-of-Way is divided into two parts -

  - 1) From Thanlyin bridge to the Tin Refining Factory – 100 ft (~30.5 meters).
  - 2) From the Tin Refining Factory to the Junction of Maritime University -150 ft (~45.7 meters).

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### 3) Cut-off Date

#### ➤ Cut-off-Date

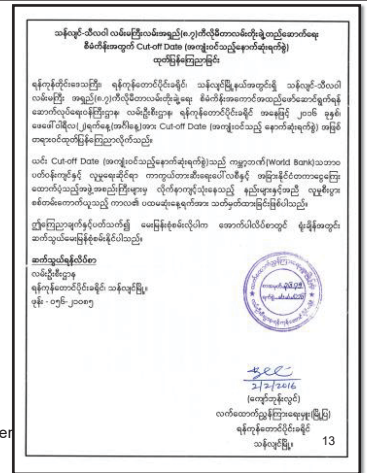
- The cut-off-date (COD) is the day to determine eligibility for entitlement to resettlement related assistance/support.
- The persons/ households who encroach into the project area after the COD are not eligible for any assistance related to the resettlement.
- For the Thilawa Access Road Project, MOC declared the **2<sup>nd</sup> February 2016**, the first day of the census, as the COD.

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### Places where cut-off-date had been announced

- Relevant Ward Administration Office.
- General Administration Office, Thanlyin Township.
- DOH, Southern District.

Cut-off-date announcement letter by MOC



### 4). Census/ Inventory Survey: Objectives

In order to identify possible PAPs/ PAHs of the Project, Census and Inventory Survey was conducted:

- Census survey is carried out in and around the project area to enumerate the number of persons/structures /facilities and their socio-economic profiles.
- Inventory survey is carried out to confirm the potential PAPs/PAHs, which have the possibility to move from the project area due to the project implementation.

For Thilawa Access Road project , the census and inventory survey were conducted at the same time starting from 2 February, 2016 and up until 19 February, 2016 . (Start day of the census, 2 February, was set as the Cut-Off Date)

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### 4). Census/ Inventory Survey: Survey Methodology



- **Target Area**
- Along Thanlyin-Thilawa Access Road (Within Fence to Fence) and
- Five Major Intersections (upto 200m within the sub-roads) Star City Junction, Mee Point Junction, Clock Tower Junction, Hospital Junction and Kyeik Khauk Pagoda Junction

- **Survey related Stakeholders**
- Representative from relevant ministries
- Ward Administrators
- Household heads or family member
- Survey Team

- **Survey Content**
- Measuring structure size, recording the structure location by using GPS and interviewing the socio-economic information

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### 5). Census/ Inventory Survey: Survey Results

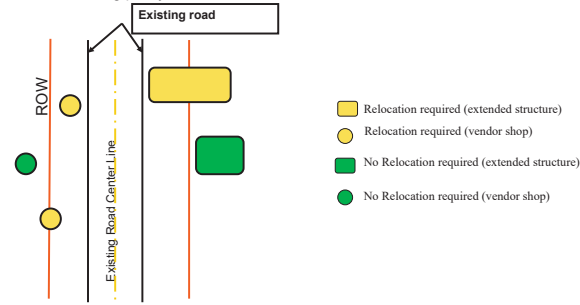
- Total of 234 vendors and 94 extended structures from outside of ROW, (total -328) were recorded.
- Moreover, signboards and other small structures (e.g bus ticket gate and telephone booth), telephone booth, small landscape were recorded within the survey area.
- Total of 2,790 road side trees were recorded.

Sr. No.	Category	Direction		Total Number	Remark
		Thanlyin to Thilawa bridge (Right Side)	Thilawa to Thanlyin bridge (Left Side)		
1	Vendor	121	113	234	Including 7 shops not opened
2	Partial extension Structure (Lampes*)	54	40	94	
3	Religious Structures	0	3	3	Entrance of Kyeik Khauk Pagoda and Kyo Pha Var Monastery
4	Signboard	127	218	345	
5	Bus Stop	11	12	23	
6	Ticket Gate	2	4	6	
7	Traffic Police Building	1	1	2	
8	Toll Gate Structures	1	2	3	
9	Security Gate/ Temporary Cycle/ Taxi	2	5	7	
10	Telephone booth	3	3	6	
11	Domestic Water Stand	10	10	20	
12	Landscape	13	12	25	
13	Trees	1457	1333	2790	Road side trees

16

### 6) Draft Eligibility (Potential PAHs and Facilities): 1

Based on the result of the census/ inventory survey, the eligibility was examined based on following policy.



The location of the shops and other facilities recorded by the survey are plotted on the map including construction boundary and Right of Way (ROW) to identify which shops/facilities require relocation.

### 6) Draft Eligibility (Potential PAHs and Facilities):2

- Out of 328 vendors/ extended structures recorded in the survey, 248 vendors/ extended structures are identified to be affected by the project and require to be relocated.
- According to World Bank's Operational Policies 4.12 (which JICA guideline refers to for details) Unlicensed vendors are not covered as project affected since they lose no land or asset through displacement. However in the project consider such vendors as some what affected and support for moving.
- Tentatively, these 248 shops are regarded as projected affected (PAHs).

Category	Number	Remark
Vendor	197	Including 20 structures which are closed during the survey period.
Annex Extension Structure	52	
Signboard	218	248
Bus Stop	22	
Bus Ticket Gate	6	
Traffic Police Station	2	
Telephone Booth	6	
Donated Water Stand	15	
Toll Gate and Security Gate	5	
Landscape	7	
Trees	1707	

### Environmental and Social Consideration

#### Key Activities for Relocation Works and IEE Study

- Oct 2013** Preparation of draft IEE (Initial Environmental Examination) Report and Abbreviated Relocation Action Plan (A-RAP) under JICA Study
- Beg of 2016** Socio Economic Survey & Tree Inventory Survey
- Feb 2016** First Public Consultation Meeting
- Jul 2016** Second Public Consultation Meeting

#### Review JICA-FS (2013) and Updating Site Conditions

- (1) Site conditions are not significantly changed from year-2013.

Baseline survey data in IEE (JICA-FS) will be utilized to formulate the Environment Management Plan (EMP).

- (2) 2 years has passed after Draft A-RAP (Abbreviated Relocation Action Plan) was prepared in JICA-FS.

### 8) Organization to Settle the Difficulties of Relocation and Assistance for Moving Cost in the future (Grievance Redress Mechanism)

- When the relocation activities are going to be implemented, MOC is intended to organize an organization with the following Ministries and Civil Societies to settle the difficulties of PAPs:

- (1) General Administration Department (District/Township)
- (2) Myanmar Police Fore (District / Township)
- (3) Department of Highways (District/Township)
- (4) Township Development Committee (District/ Township)
- (5) Settlement and Land Records Department (District/Township)
- (6) Forest Department (District/Township)
- (7) Ward Administrators
- (8) Kyeik Khauk Pagoda Trustee
- (9) Social Community Leaders

### 7)-1 Assistance for Moving (Draft)

- The Right-of-Way area is owned by the Department of Highways, Ministry of Construction.
- In principle, for vendors, MOC will support for moving either as the appropriate amount of moving cost or manpower for moving.

The extent and the type of moving support will be different depending on the type and size of the structures (PAHs).

### A-RAP

- The Abbreviated Relocation Action Plan (A-RAP) is disclosed to the public.

Based on the results of census and inventory survey as well as the information on project description, draft A-RAP is prepared. The draft A- RAP consists of following components:

1. Census and Inventory Survey Results
2. Socio-Economic Profile
3. Identification Method of Project Affected Facilities/Structures
4. Comparison between Relevant Laws and Regulation in Myanmar and International Practices on Resettlement
5. Support Policy
6. Grievance Redress Mechanism
7. Monitoring and Evaluation

### 7)-2 Reference for Identification of Assets



Facility Extended to ROW from Permanent Structure



Mobile vendors



Vendors with easily reassembled structures



Vendors with fixed assets but reassemblable structures

### For Further Contacts

- Tentatively, the construction might start on November 2017 so that the some of relocation activities will be implement to finish by the end of October 2017 as the initial preparation steps for construction are required to be carried out in October.
- Concerning with the further detail information of relocation information, MOC will inform to PAPs through relevant ward administrators.

**Thank you very much!**



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**MEETING MEMO**

Date & Time :	25 <sup>th</sup> October, 2017, 2:30 - 4:30 PM
Place	Meeting room at ECD in Nay Pyi Taw
Attendees :	Participants are from -ECD of MONREC in Myanmar -JICA experts in Myanmar -Officials from MPWT and MoE in Cambodia
Project Team :	Mr. Ito Tsuyoshi, JICA Expert Mr. Nakayama Makiko, JICA Expert Mr. Penh Soheat
Agenda / Discussion Points :	Technical discussion about EIA legal frameworks and implementation in Myanmar and Cambodia

**Welcome by DG of ECD**

- Would like to thank JICA for arranging the meeting
- We do expect to have future cooperation between Cambodia and Myanmar in road infrastructure development

**Comments from Cambodian side**

1. Does IEE report include social impacts and need to conduct public consultation?
2. ECD has a mandate to review and approval on EIA reports, so how can you facilitate, compromise and consolidate different points of view during the EIA review meeting?
3. Can EIA report preparation be done by project owner?
4. Resettlement Action Plan (RAP) is included in the EIA report in Cambodia. Is it included in the EIA report or not in Myanmar?
5. Is legal punishment applied for late or irregular report submission?
6. Is there any IEE report without conducting public consultation with local affected people?
7. Does IEE or EIA report include cost and benefits analysis? Because Cambodia requires to include cost and benefits analysis in the EIA report.



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8. Third party refers to local EIA experts or international experts?
9. There are several legal documents and regulation related to EIA in Cambodia such as natural resource and environmental protection law (1996), EIA process sub-degree (1999), Prokas on IEE and EIA report, draft EIA law, some draft EIA sectoral guideline, and environmental code.
10. Environmental and Social Office of Planning Department of MPWT is not a main actor or mandate to review, approve and monitoring on EIA report and EMP at all, it is just line agencies to involve as member if there is any related project development in road infrastructure development.
11. EIA report must be written in Cambodian language.

### Comments from Myanmar side

1. It is a requirement that IEE reports have to include social impacts and conducting public consultation because Myanmar government think that people are center of development and people is fundamental for conducting EIA.
2. It has been hard and time consuming to facilitate, compromise and consolidate different points of view who have different backgrounds and expertise. Anyways, we have tried to acknowledge all points of view and try to consolidate all those comments based on the majority and mutual understanding. Also, project owners are also invited to join the review meeting and project owners cannot completely deny comments made by the review committee.
3. EIA report preparation cannot be done by project owner, it must be done by third party (EIA consultants).
4. Both RAP and EIA report are submitted to ECD and ECD will call for public meeting to get comments prior to approval.
5. If we found any legal violation, punishment will be applied. But so far there is no project was punished.
6. There are some IEE reports that don't have public consultation with local affected people if the project site is far away from local people.
7. Cost and benefit analysis is very useful and important, but It is not necessary to include cost and benefit analysis for all project.
8. Third party refers to both local and international EIA experts. However, international experts cannot be stand alone.
9. Are there any legal document or regulation related to EIA in Cambodia?





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10. How can EIA report preparation, assessment, review and monitoring be done by Environmental and Social Office of Planning Department at MPWT?
11. Is EIA report written in Cambodian or English?

**Results based on questions and discussion items (prepared by Mr. Ito)**

1. Characteristics of EIA process in Myanmar

2. Which phase of the EIA process could be involved by the project proponent in Myanmar

- Project proponent can involve in EIA report review phase and project monitoring phase and EIA report preparation phase have to be done by the third party.

3. Supposed EIA implementation issues in Myanmar

a. EIA report review phase

- EIA report review has to be funded by project proponent. We are now recruiting more officials in environment management and environmental engineering.
- ECD is developing some sectoral guidelines such as oil, gas, mining, hydropower, tourism and public participation guidelines and many consultation meetings has been organized with line agencies and NGOs to develop the guidelines.

b. Project monitoring phase (Reviewing EMP, EMoP, EMoR)

- ECD local staff will report to ECD if project owner does not comply with EMP and ECD will dispatch officials to investigation.
- We strengthen and law enforcement to ensure that project proponent submit monitoring report regularly.
- Local staff of ECD has limited capacity, especially technical knowledge and skills.



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**MEETING MEMO**

Date & Time :	25 <sup>th</sup> October, 2017, 9:00 - 12:30 PM
Place	Park Royal Hotel in Nay Pyi Taw
Attendees :	Participants are from -ECD of MONREC and MOC in Myanmar -JICA experts in Myanmar and representatives from JICA Myanmar Office -Officials from MPWT and MoE in Cambodia
Project Team :	Mr. Ito Tsuyoshi, JICA Expert Mr. Nakayama Makiko, JICA Expert Mr. Penh Socheat
Agenda / Discussion Points :	Understanding about EIA legal frameworks and implementation in Myanmar and Cambodia, especially practical experiences in Road Infrastructure development and water resources management.

**Opening remarks (by Mr. Than Aye, Deputy Director General, Environmental Conservation Department)**

- Environment and social impacts caused by road infrastructure development are very important and it should be included in the project design and management in order to minimize the negative impacts.
- Purpose of technical exchange is to gain technical experiences between Cambodia and Myanmar, particularly in road infrastructure development. I would like to thank JICA for support so far including technical supports.
- Hope that the seminar will have fruitful results and looking forwards the collaboration in the future between Cambodia and Myanmar through JICA support.

**Brief explanation of Seminar objectives and the topics (by Mr. Prok Novida, Director of Planning Department, MPWT)**

- We, Cambodian team, are happy to be here, especially in the peaceful city. Please let me inform about the purpose of this technical exchange trip: To obtain the knowledge on EIA in Myanmar as reference to develop REG in the Project; To understand EIA System in



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Myanmar through the discussion with Ministry of Natural Resource and Environmental Conservation in Myanmar and JICA's EIA Project; To exchange ideas or experiences in EIA Public Infrastructure Sector with Ministry of Construction in Myanmar; And to find out the challenges on EIA issues in Myanmar by site visit.

- Regarding this morning technical exchange seminar, it will mainly focus on the EIA legal frameworks and implementation in Myanmar and Cambodia, especially practical experiences in Road Infrastructure development and water resources management.
- Hope that we will have fruitful discussion and gain some valued learning experiences from each other.
- Once again, I would like to thank MONRE in Myanmar and JICA so much for great cooperation and supports.

**Presentation on “The project for capacity development in basic water environment management and EIA system in Myanmar” (By Dr. Kanji Usui, JICA Expert of the Project in ECD, Myanmar)**

Main points of the presentation are summarized as below:

- EIA capacity development
- Short, middle and long-term goal of EIA capacity development
- Roadmap of EIA capacity development
  - A. Support for law development
  - B. Capacity building (curriculum of the training modules and features of the training)
  - C. Supporting tools (e-manual, coverage of e-manual, mechanism of e-manual and tracking system)
  - D. Socialization
  - E. Relationship-building

**Questions and answers:**

Mr. Chay Ya: According to slide number 5, what kind of methods for supporting law development? Or How can JICA project support for law development at ECD?

Dr. Usui: I am in charge of EIA for the JICA project to ECD. Through the JICA project, the project supports for law development at ECD by consultant registration scheme and developing application form (submission form). Regarding the consultant



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registration scheme, the project has collected information in the country and lesson from other countries as well. Also, many internal meeting with ECD officials have been conducted. Additionally, application form is efficient for project proponent to submit their EIA report as attachment.

Mr. Chay Ya: Regarding the physical environment such as soil, water, does Myanmar EIA procedure comply with Japanese standard or international standard?

Dr. Usui: The EIA procedure in Myanmar complies with JICA standard as well as international standard, but in practice is very hard to implement due to capacity of staff and limited staff. Thus, capacity building is needed, especially capacity building for local staff. For example: guideline support by ADB has only around 10 internal meetings, while JICA has organized about 50 internal meetings and discussion with ECD officials.

**Presentation on Overall of CESCoR Project (By Mr. Ito Tsuyoshi, JICA Expert of the project in Cambodia)**

Main points of the presentation are summarized as below:

- Basic information of the project
- Project outline
- Project organization and members
- Past main events related to EIA/EMP team
- Main progress and schedule of EIA/EMP team
- Main events related to EIA/EMP team in the near term
- Planned detail schedule for REG development
- Table of contents of draft REG
- Expecting items to be discussed on this technical exchange

**Questions and answers:**

Mr. Khaun Cho: Does MPWT have any legal documents for ROW management along highway and bridge?



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Mr. Reagan: Legal documents related to ROW management along national roads and railway are law on land, law on road and sub-degree 197 (article 8 ROW is 30 m for national road one digit and so on). I think Myanmar has bigger space for ROW based on my observation.

ECD Official: Does sub-degree 197 have any classification for road, highway, other types of road?

Mr. Reagan: Sub-degree 197 focuses on national roads (1 and 2 digit) and railways under authorization of MPWT and rural road is under Ministry of Rural Development that is mentioned in the law on road.

**Presentation on EIA system and EIA implementation issues of ECD, MONREC in Myanmar (Dr. San Oo, Director of NRC and EIA Division)**

Main points of the presentation are summarized as below:

- National environment policy statement
- Environmental legislations to improve EIA system
- Myanmar EIA process
- EIA review process
- Key features of good practices and its consequences
- Lessons learnt
- Ways forward

**Questions and answers:**

Mr. Vireak: For public project in Myanmar, can project proponent from government use internal experts instead of third party?

Dr. San Oo: Both private and public projects have to hire third party as EIA reports.

Mr. Reagan: 1. Please kindly confirm about committee of EIA review, whether it is permanent committee or project by project.

2. The time frame for EIA review should be clarified in EIA procedure



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- Dr. San Oo: 1. Review team are from technical official at concerned line ministries, project owners, third party and ECD.
2. Regarding the time frame for reviewing EIA report, we also face with this problem as well. We have to respond within 60days for IEE, 90days for EIA and also a lot of reports are waiting for our review. Anyway, we have tried our best to work on that and based on mutual understanding.

**Presentation on Tasks and the implementation issues of MPWT for EIA road sector in Cambodia (By Mr. Srey Vireak, Counter Part, MPWT in Cambodia)**

Main points of the presentation are summarized as below:

- Cambodia at a glance
- Overview of MPWT
- Overview of department of planning
- EIA/EMP related to MPWT's transportation infrastructure
- Conclusion

**Questions and answers:**

Dr. Usui: According to slide presentation 14, who prepares EMP?

Mr. Vireak: Based on regulation, EMP has to be prepared by EIA experts from EIA consulting firm (as third party) and finance supported by project owner or development partners. After that project owner has to implement the EMP.

Mr. Reagan: Donor has a requirement stated in ToR with project owner on what to do and not to do.

Myanmar Official: Slide 16 indicates about requirement for conducting EIA, is there any requirement for conducting IEE in road sector?

Mr. Vireak: Requirement for conducting EIA in road sector is from 100km and any road development or improvement across protected area, but it does not mention about requirement for conducting IEE.



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**Presentation on ESIA Consideration (by Mr. Kyaw Kaung Cho, Chief of Engineer, DoE, Myanmar)**

Main points of the presentation are summarized as below:

- EIA flow chart
- Institutional background
- Institution for environmental governance
- Integrated approaches: development policy and strategic framework
- Fundamental laws and regulations
- Requirement project for IEE and EIA
- Environmental description of Dala bridge
- Conclusion

**Questions and answers:**

JICA expert: Does Kala bridge project comply with the EIA procedures?

Mr. Kyaw Kaung: It is okay for environmental impact, but it is hard to comply with the WB and ADB guideline for social impacts. Anyway, the issues have been addressed after many consultations have been conducted with local people and relevant stakeholders.

**Ms. Ei Ei Myo, Infrastructure Development Project in Thilawa area Phase II (Access Road Project)**

Main points of the presentation are summarized as below:

- I. General description of the project
  - Introduction
  - Proposed road design
- II. Environmental and social consideration of the project
  - Introduction
  - Right-of-way declaration by MOC





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- Cut-off -Date
- Survey purpose and methodology
- Result of census and inventory survey
- Draft eligibility list
- Assistance for moving cost
- Proposed organization to settle the difficulties of relocation and assistance for moving cost in the future
- About abbreviated relocation action plan (A-RAP)

**Closing remarks (by Dr. San Oo)**

- We are in development stage, we exchange and learning lessons learnt from each other. It would be great to improve our work effectiveness and efficiency. Mutual understanding among relevant stakeholders can ensure the harmony our country.
- It is cooperation between two governments. It is very good time to cooperate. And it is just starting now. We are looking forward for future collaboration, even in our office. Thank you very much





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**MEETING MEMO**

Date & Time :	26 <sup>th</sup> October, 2017, 10:30 - 11:40 AM
Place	Meeting room at MoC in Nay Pyi Taw
Attendees :	Participants are from -Department of Highway, MoC in Myanmar -JICA experts in Myanmar -Officials from MPWT and MoE in Cambodia
Project Team :	Mr. Ito Tsuyoshi, JICA Expert Mr. Nakayama Makiko, JICA Expert Mr. Penh Socheat
Agenda / Discussion Points :	Technical discussion about EIA implementation in road sector between Cambodia and Myanmar

**Results of the Meeting note with MoC are described as below:**

Welcome remarks (by Deputy Director General of Highway Department)

- Would like to thank JICA for arranging the meeting
- We do expect to have future cooperation between Cambodia and Myanmar in road infrastructure development

Technical exchange on EIA implementation in road sector:

- All participants are from Department of Highway (DH) of MoC
- Both grant or loan aid, DH hire EIA experts to conduct EIA and submit to ECD for approval.
- DH does not have any experiences in implementing EMP, so far DH have hired third party to handle the work because officials in charge of EIA are not specialized in the EIA, most of officials are specialized in civil works or infrastructure engineering; even though DH just have EIA division under Highway Department.
- For project in the past, DH did not conduct EIA, but due to requirement of WB, ADB and JICA as development partners, DH has started to conduct EIA and it is a must for both public and private project. Additionally, officials in DH also got short-term training by



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WB, ADB or JICA projects.

- To implement the project, Project Management Unit (PMU) has been established and it consists of environment and social specialists, civil engineers and technical officials from MoC.
- DH wishes to have a technical exchange in EIA implement in Cambodia through JICA support.





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**Date:** 25 October 2017

**Time:**

**Location:** Park Royal Hotel in Nay Pyi Taw

**Topic:** Technical Exchange Seminar

**Sign-in Sheet  
(Cambodian Participants)**

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Mr. Prok Novida	Department of Planning, MPWT	Director			
2	Mr. Srey Vireak	E&S Office, DoP, MPWT	Official			
3	Mr. Bour Chhay Ya	E&S Office, DoP, MPWT	Official			
4	Mr. Dun Vandyreagan	Monitoring and Evaluation office, ICD, MPWT	Chief of Office			
5	Mr. Peang Samoeun	ICD, MPWT	Deputy Chief of Office			
6	Mr. Manh Vutha	Bilateral Cooperation Office, ICD, MPWT	Deputy Chief			
7	Ms. Men Uonmalin	EIA Department, MoE	Official			
8	Mr. Yav Net	EIA Department, MoE	Official			
9						
10						
11						



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**Date:** 25 October 2017

**Time:**

**Location:** Park Royal Hotel in Nay Pyi Taw

**Topic:** Technical Exchange Seminar

**Sign-in Sheet  
(JICA Project Team in Cambodia)**

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Mr. Ito Tsuyoshi	JICA project team	ESC/EIA/EMP Expert			
2	Ms. Nakayama Makiko	JICA project team	Training Plan and Implementation 1			
3	Mr. Penh Socheat	JICA project team	Technical Assistant			
4						
5						
6						
7						



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Date: 25 October 2017

Time:

Location: Park Royal Hotel in Nay Pyi Taw

Topic: Technical Exchange Seminar

**Sign-in Sheet**  
(JICA Project Team and JICA Office in Myanmar)

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Ms. Tel Tut Zana	JICA Myanmar Office	Assistant Program Officer			<i>[Signature]</i>
2	Kei Senoo	JICA/MOC	JICA expert			<i>[Signature]</i> gmail.com
3	AKIN MITSUBISHI	airto	diff.			<i>[Signature]</i> on 2/21
4						
5						
6						
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Date: 25 October 2017

Time:

Location: Park Royal Hotel in Nay Pyi Taw

Topic: Technical Exchange Seminar

**Sign-in Sheet**  
(Myanmar Official)

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Hla Hla Htwe	EIA / ECD / MONREC	Deputy Director			<i>[Signature]</i>
2	Saw Maung Theim	EIA / ECD / MONREC	Deputy Staff Officer			<i>[Signature]</i>
3	Daw Aye Aye Win	ECD / MONREC	AD			<i>[Signature]</i>
4	Daw Nya Nya Yee	ECD / MONREC	DSO			<i>[Signature]</i>
5	Htet Thiri	ECD / MONREC	DSO			<i>[Signature]</i>
6	Ladd Moe Tin Win	ECD / MONREC	DSO			<i>[Signature]</i>
7	Hnin Ei Ei Htwe	ECD	-			<i>[Signature]</i>
8	Aung Ko Ko	ECD	DSO			<i>[Signature]</i>
9	Mr. Kyi Lwin	ECD	Staff Officer			<i>[Signature]</i>
10	Daw Thalar Win	MOC	AD			<i>[Signature]</i>



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11	Khin Myat Thwe	Environmental Conservation Department	Staff Officer		
12	Khin Myo Sat Aye	"	Deputy Staff Officer		
13	Tin Tin Aye	"	Staff Officer		
14	U THAN AYE	"	DDG		
15	U YE Yin Htet	Ministry of Construction	staff officer		
16	U Kyaw Kaung Cho	Ministry of Construction	Chief Engineer		
17	Daw Sae Zin Aye	Ministry of Construction	Staff Officer		
18	Daw Yin Min Maung	Ministry of Construction	Assistant Junior Engineer		
19	Daw Aye Khaing Mon	ECD	Deputy Staff Officer		
20	Daw me me Htin	DOB, MOC	Assistant Director		
21	Daw Ei Ei Fun	DOB, MOC	Staff Officer		
22	Dr San Oo	ECD / MONREC	Director		
23	U Toe Toe	DOH / MOC	Deputy Director		
24	Daw Ei Ei Myo	DOH, MOC	Deputy Director		
25					



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Date: October 25, 2017

Time:

Location: ECD, MONREC

Topic: Technical Exchange Seminar

Sign-in Sheet  
(Myanmar Official)

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1	Yau Net	EIA / MoE	Technical officer			
2	MEN LONMALIN	EIA / MoE	officer			
3	LEANG Sam Oeun	ICD / MPWT	Deputy chief officer			
4	HANH VUTHA	ICD / MPWT	Deputy chief officer			
5	Daw Vandyraeun	ICD / MPWT	Chief officer			
6	Srey Vitreak	DoP / MPWT	Environmental & Social officer			
7	Bour Chhay Ya	DoP / MPWT	Environment & Social officer			
8	U Kanji Usui	JICA / MONREC	Advisor			
9	EROK NOVISA	DoP, MENT	Director of Planning			
10						

October 25, 2017  
ECD, MONREC



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11	Dr San Go	EIA Div. / ECD	Director		
12	Mr. Hla Hla Htuc	EIA / ECD	Deputy Director		
13	U Linn Aung	EIA / ECD	deputy staff officer		
14	U Soe Thida	EIA / ECD	Deputy staff officer		
15	Mr. Kyi hui	- - -	Staff Officer		
16	Ms. Thoe Nu Htun	EIA / ECD	Staff Officer		
17					
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THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



Date: 26 October 2017

Time:

Location: Ministry of Construction

Topic:

#### Participants List

No	Name	Department/Ministry	Position	Phone	E-mail	Signature
1						
2	PROK NOVIDA	DoP, MPWT	Director of Div			
3	Dun Vandy reang	MPWT / ICD	Chief officer			
4	Manh Vutha	ICD / MPWT	Deputy chief officer			
5	Leang Samoeun	ICD / MPWT	Deputy chief officer			
6	Bour Chhay Ya	DoP / MPWT	Social and Environment officer			
7	Srey Virenk	DoP / MPWT	Environment and Social officer			
8	You Net	EIA / MoE	Technical officer			



October 26, 2017

MOC



THE PROJECT FOR CAPACITY ENHANCEMENT  
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
IN IMPLEMENTING AGENCY IN ROAD SECTOR  
IN THE KINGDOM OF CAMBODIA (CESCOR)



No	Name	Department/Ministry	Position	Phone	E-mail	Signature
	HEU LONMALIN	EIA / MoE	Technical officer			<i>[Signature]</i>
	THAN NAINH	DOH / MOC	Staff officer			<i>[Signature]</i>
	U SHWE ZIN		Director			<i>[Signature]</i>
	U Thany Myint Aun	DOH	e.e			<i>[Signature]</i>
	U Kyau <sup>2</sup>	DOH	CE			<i>[Signature]</i>
	U Khinmy Kyaw	DOH / MOC	DDG			<i>[Signature]</i>



Project for Capacity Enhancement on Environmental and Social Considerations  
in Implementing Agency in Road Sector in the Kingdom of Cambodia

# The 2nd Third Country Technical Exchange Program

November 2018

CTI Engineering International Co., Ltd.  
Environment and Social Infrastructure Consultant Co., Ltd.  
Hanshin Expressway Co., Ltd.



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1. Purposes of the Technical Exchange Program

- To know actual conditions of ROW management in neighboring countries
- To share experiences of challenges on ROW management among neighboring countries.

2. Period and Schedule (ROW Management Seminar and Third Country Visits)

(1) ROW Management Seminar (Schedule of Participants from Laos and Thailand)

No	Date	Schedule	Location
1	26 Sep 2018	Leave from their countries to Phnom Penh	Phnom Penh
2	27 Sep 2018	(AM) Technical Exchange Meeting with MPWT in Cambodia (PM) Site Visit	Sunway Hotel, Phnom Penh Kampong Chnang Province
3	28 Sep 2018	Leave from Phnom Penh to their countries	

(2) Third Country Visit to Laos and Thailand

No	Date	Schedule	Location
1	22 Oct 2018	Leave from Phnom Penh to Vientiane (VN920 17:50-19:10)	Vientiane
2	23 Oct 2018	(AM) Technical Exchange Meeting with MPWT in Laos (PM) Site Visit	Vientiane  ROW Management Site
3	24 Oct 2018	Leave from Vientiane to Bangkok (PG944 11:40-12:55)	Bangkok
4	25 Oct 2018	(AM) Technical Exchange Meeting with DOH, MOT in Thailand (PM) Site Visit	Bangkok  ROW Management Site
5	26 Oct 2018	(AM) Courtesy Call to JICA Office Leave from Thailand to Phnom Penh (PG935 17:20-18:35)	

### 3. ROW Management Seminar in Phnom Penh

#### (1) Outline

Date & Time	September 27, 2018 from 8:00am-5:30pm
Place	SUNWAY Hotel
Attendees from Laos side	<ul style="list-style-type: none"> <li>- Mr. Somsanouk VONGSOMPHOU, Deputy Director of Environmental Research and Disaster Protection Division, MPWT Laos</li> <li>- Ms. Mailoryang NENGCHUE, Technical Staff of Environmental Research and Disaster Protection Division, MPWT Laos</li> </ul>
Attendees from Thailand side	<ul style="list-style-type: none"> <li>- Mr. Saneh NINGCHAIYEN, Director of Bureau of Right of Way,</li> <li>- Dr. Jiraroth SUKOLRAT, Director of Project Management Group, Bureau of International Highways Cooperation</li> </ul>
Attendees from Cambodia side	<ul style="list-style-type: none"> <li>- Mr. SANRANGDY Namo, Deputy Director General of Techniques</li> <li>- Mrs. PIN Vuthea, Director of International Cooperation, ICD</li> <li>- Mr. Chea Samanag, Chief of ROW Management Office, RID</li> <li>- Mr. Khuon Kompheak, Chief of Road Safety Office, RID</li> <li>- Mr. Hay Chandara, Deputy chief Officer, RID</li> <li>- Mr. Sao Premarak, Technical officer, RID</li> <li>- Mr. Kaing Theara, Officer, RID</li> <li>- Mr. Long Davuth, Officer, RID</li> <li>- Ms. Eam Sokchea, Deputy Chief Officer, PID, and other officials from MPWT</li> </ul>
JICA Advisors and JICA Cambodia Office	<ul style="list-style-type: none"> <li>- Mr. KAWASAKI Toshimasa, JICA Expert, Transport Policy Advisor</li> <li>- Mr. OTA Masaya, Chief Advisor, Project for the Modernization of Vehicle Registration and Inspection System</li> <li>- Ms. NAKAMURA Nori, Project Coordinator, Project for the Modernization of Vehicle Registration and Inspection System</li> <li>- Mr. SANUI Kazumasa, Chief Advisor, The Project for Improving Logistics System of Cambodia</li> <li>- Mr. IWASE Hideaki, JICA Cambodia Office</li> </ul>
Project Team:	<ul style="list-style-type: none"> <li>- Dr. Tsuchida Takayuki, Mr. Ito, Mr. Robinson, Mr. Kumagai, Ms. Nakayama, and assistants</li> </ul>
Agenda / Discussion Points	<ul style="list-style-type: none"> <li>- To acquire basic knowledge about each country's experiences on ROW Management by sharing presentation</li> <li>- Visit Site of Pilot Project</li> </ul>



(2) Agenda

Time	Program
08:00-08:30	Registration
08:30-08:35	<b>Cambodian National Anthem</b>
08:35-08:40	<b>Opening Remarks</b> Mr. Samrangdy Namo, Deputy Director General of Techniques, Ministry of Public Works and Transport (MPWT), Cambodia
08:40-08:45	<b>Explanation of Seminar Objectives and the Topic</b> Mr. Hay Chandara, Deputy Chief Officer of ROW office, MPWT Cambodia
08:45-08:50	<b>Brief Self-Introduction</b> Representative of Each Office
08:50-09:05	<b>Presentation on “CESCoR”</b> Mr. Khuon Kompheak, Chief Officer of Road Safety and Environment office, MPWT Cambodia



09:05-10:00	<b>Presentation on “ROW Management in Cambodia”</b> Mr. Chea Samnang, Chief Officer of ROW office, MPWT Cambodia
10:00-10:15	Coffee Break
10:15-11:15	<b>Presentation on “ROW Management and Issues”</b> Mr. Somsanouk VONGSOMPHOU, Deputy Director of Environmental Research and Disaster Protection Division, MPWT Laos
11:15-12:15	<b>Presentation on “Property Expropriation”</b> Dr. Jiraroth SUKOLRAT, Director of Project Management Group, Bureau of International Highways Cooperation, Ministry of Transport Thailand
12:15-12:30	<b>Closing Remarks</b> Mr. Samrangdy Nam, Deputy Director General of Techniques, Ministry of Public Works and Transport (MPWT), Cambodia
12:30-13:30	<b>Luncheon</b>
13:30-17:30	<b>Visit Site of ROW Management at National Road No.5</b> Guests from Third Countries and Taskforce Members

(3) Minutes of Discussion

1. **Opening Remark by Mr. Samrangdy Nam, Deputy Director General of Techniques**
2. **Presentation on Seminar Objective and Topic by Mr. Hay Chandara, Deputy chief officer of ROW, RID**
3. **Presentation on CESCOR by Mr. Khuon Kompheak, Chief officer of Road Safety and Environment, RID**
4. **Presentation on ROW Management in Cambodia by Mr. Chea Samnang, Chief officer of ROW**

➤ **Questions and Answers:**

*Q1 (by Dr. Tsuchida):* Can you clarify the responsibility and duties of Ministry of Economy and Finance and MPWT on Resettlement?

*A1 (by Mr. Samnang):* Regarding the Resettlement, there is an inter-ministerial committee which normally consists of officials from MEF, MPWT or Ministry of Water Resources and Meteorology or Ministry of Environment, or Ministry of Rural Development based on the Projects. The committee is coordinated and led by Ministry of Economy and Finance.

**Q2 (by Mr. Chhaya, DoP):** Can you clarify the Process of Resettlement. When can we apply for RAP (Resettlement Action Plan)? Regarding the Challenges, are there old encroachers or new encroachers after construction? And how to protect ROW efficiently?

**A2 (by Mr. Chea Samnang):** Regarding the Resettlement Process, it is hard to give details to you because here I just presented the process only based on the information I got. For the encroachment, there are both old and new. After resettlement, people come back to ROW and also new encroachers start to encroach. For the prevention as well as the protection of ROW, in future we will have ROW Management Guidelines (RMG) from CESCO Project, we will apply this RMG with Software Application (Aerial Photo/CSI) to update the new encroachment based on the report from the Patrol Team.

**Q3 (by Mr. Samrangdy Namo):** I would like to share the experiences on Resettlement Action Plan. Resettlement process or compensation varies from one project to another based on the requirement from Development Partners such as JICA, ADB and World Bank. For the Gov't, we have limited national budget. Environmental Consideration is one of core components to get budget from Development Partners. We need to send the consultant to do survey at the site, collect data, prepare report and estimate the budget. We focus only on Corridor of Impact (COI) in order to minimize the budget. Local People confuse between the COI and ROW, so COI is not ROW Resettlement process is problematic. One example was the case of Neak Leung to Bavet Road Construction Project. It took 10 years to solve Resettlement because local people got the help from NGOs to appeal to ask for more compensation. Same problem also occurred with The Railway Project.

Anyways, my question is about the Aerial Photo. The current Aerial Photo can identify the old existing Central Line? How about the new Central Line in case there will be a shift of central line in the future?

**A3 (by Mr. Chea Samnang):** Currently, pilot project is taking the aerial photo to get existing central line from National Road No.5 before the rehabilitation. After the project or in the future, we will develop or update new aerial photo data during 5 to 10 years period if we have budget.

Recently, we have concrete ROW Poles installed both side along the NR No.5. Road can be widened inside the ROW. If Road shifts to Private land, we need to compensate.

**5. Presentation on Issues and ROW Management in Laos by Mr. Somsanouk VONGSOMPHOU, Deputy Director of Environmental Research and Disaster Protection Division, MPWT Laos**

➤ **Questions and Answers:**

**Q1 (by Mr. Samrangdy Nam):** Do you have ROW registered? In Cambodia, we have also discussed the registration of ROW but until now we still cannot do it. Based on your last slide, I noticed that there are concrete electricity poles outside the ROW, are there any complaints from local people?

**A2 (by Mr. Somsanouk):** Actually, we haven't had ROW registered yet. In the future we will have. We need to discuss with Local people and Ministry of Natural Resources and Environment (MONRE) about this matter.

Regarding the electricity poles outside the ROW, there is no complaint because electricity agency belongs to the government. Moreover, to provide the electricity to local people is prioritized. Therefore, some cases electricity agency needs to cooperate with MPWT.

**Q2 (by Mr. Chea Samnang):** I would like to share some information on ROW registration in Cambodia. It is difficult to register the ROW because we need to do it by village name as land parcel; therefore, it is going to take a long time with many paper works. However, we have already excluded the ROW from Land Title. If local people living along ROW can get Land Title by excluding the ROW.

**Q3 (by Dr. Tsuchida):** According to Road Law, Article 21, which institution provides the construction permit to local people? Will you decide the compensation before planning or after project decided?

**A3 (by Mr. Somsanouk):** District office of MPWT will issue the construction permit. We have decentralized the power to district offices. Therefore, District office of MPWT can do it.

Regarding the compensation, during the feasibility study, consultant will do the survey and submit the proposal to MONRE for check.

**Q4 (by Mr. Samrangdy Nam):** Who is in charge of Replacement cost? How often do you update the cost based on the market price? In Cambodia, sometimes, replacement cost is not

satisfied by local people. Then, local people urged the independent agencies to check the price because price from Gov't is not updated.

**A4 (by Mr. Somsanouk):** We have committee as Provincial or District Resettlement Committee who is in charge of Replacement cost. Committee can consist of MPWT and Ministry of Agriculture based on the type of project. MPWT is the coordinator. We have consultant to go to survey and check the price. The replacement cost varies based on the house types and construction materials.

For the price update, we have DMS (Detail Measurement Survey) to survey the land price. Normally, Gov't plans to cooperate with land authority for the land price on the local market. Price is also based on the location.

## **6. Presentation on Property Expropriation by Mr. Saneh NINGCHAIYEN and Dr. Jiraroth SUKOLRAT, Department of Highways, Thailand**

### **➤ Questions and Answers:**

**Q1 (by Mr. Ito):** I was surprised that you have detailed compensation process. How do you define the individual with rights to affected water or power lines?

**A1 (by Dr. Jiraroth):** If we cut the existing electricity or water lines, we will pay to affected individual for the new installation. However, after we have acquired the land, we will not pay for that.

**Q2 (by Dr. Tsuchida):** Will you pay for demolition for the road construction?

**A2 (by Dr. Jiraroth):** For the new road or new bypass, we will pay to land owners; however, any structures in the ROW for existing road, the demolition of the structure will be paid by the owner.

**Q3 (by Dr. Tsuchida):** Our project is preparing the ROW Management Guidelines (RMG) to prevent the increase of illegal encroachment and to reduce the resettlement cost for the development of existing road. You also have the ROW poles as illegal encroachment prevention. Do you have other approaches?

**A3 (by Dr. Jiraroth):** We have Law to punish any District Officer who neglects their duties to protect the ROW and also another Law to punish the illegal encroacher. Besides that, we have ultimate design to prevent the encroachment.

**Q4 (by Dr. Tsuchida):** For road development in Thailand, we have observed that you construct the road from edge of ROW in order to maintain middle space for widening the road and for preventing the illegal encroachment.

**A4 (by Dr. Jiraroth):** Actually, it is not common practice. It depends on Road Design. We also use the pole to determine the boundary. In some cases, we have hidden the central line to prevent the people to sell the land before the project started.

**Q5 (by Mr. Samrangdy Nam):** In case local people do not satisfy with the compensation, do you have any solution? For Land acquisition for road construction or widening, there are consensual acquisition and Expropriation. Which one is higher cost?

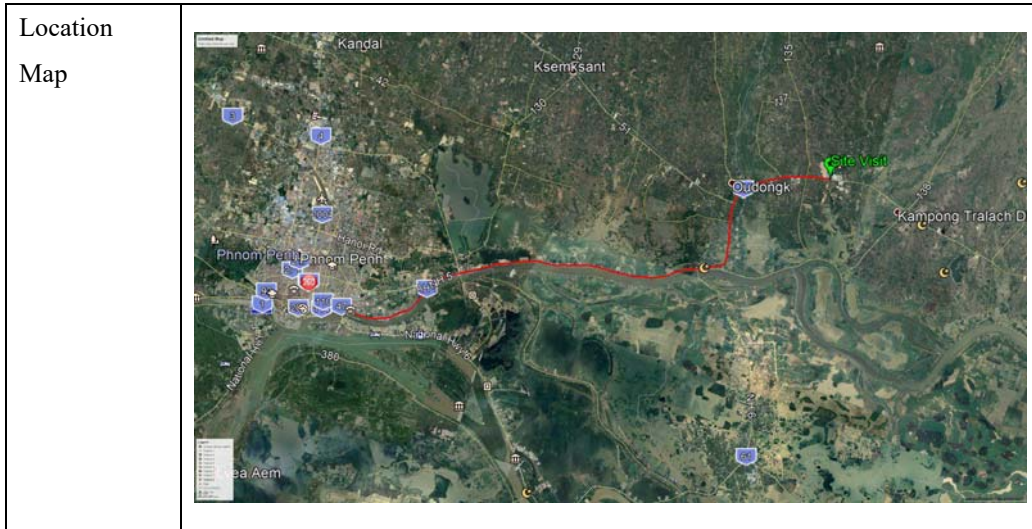
**A5 (by Dr. Jiraroth):** Actually, we will have feasibility study to organize the Public Participation meeting. During the meeting, consultant will propose several (4 to 5) options of new alignments to local people. In case, there is no option satisfied by local people, we will go back to the Cabinet to consider the project again whether it is important for economic or social development. Finally, the cabinet will decide.

Among the Consensual acquisition and Expropriation, consensual acquisition costs higher than Expropriation; however, we encourage local people to go along with consensual acquisition. Moreover, local people do not need to pay tax from selling the land to the Gov't.

## **7. Closing remarks by Mr. Samrangdy Nam, Deputy Director General of Techniques**

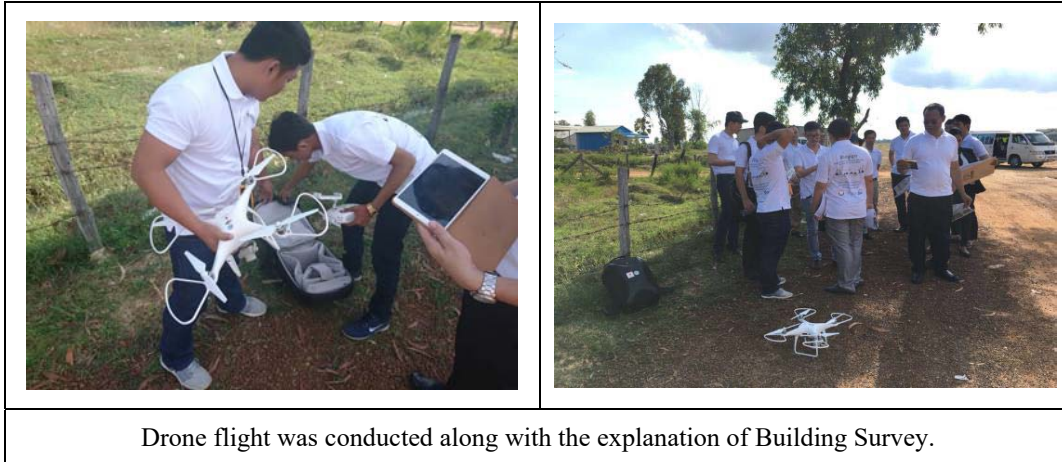
### **(4) Site Visit**

Location	In Kampong Chhnang Province on National Road No. 5, 47km away from Phnom Penh Capital
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**Activity at Site Visit:** After the seminar, the participants went to visit the site at Kampong Chhnang Province along National Road No.5. The project team explained the pilot project activities on Current Status Identification (CSI). Drone flight was conducted along with the explanation of Building Survey.





#### 4. Third Country Visit to Laos

##### (1) Outline

Date & Time	23 <sup>rd</sup> October 2018
Place	Public Works and Transport Research Institute, Ministry of Public Works and Transport in Laos
Attendees from Laos side	Mr. Somsanouk VONGSOMPHOU, Deputy Director of Environmental Research and Disaster Protection Division; Ms. Mailoryang NENGCHUE, Technical Staff, Environmental Research and Disaster Protection Division; Mr. NOMURA Hiroshi, JICA Expert to Laos MPWT, and Other Seven Officials from Laos MPWT
Attendees from Cambodia side	Mr. CHEA Samnang, Chief Officer, ROW Management Office; Mr. KHOUN Kompheak, Chief Officer, Road Safety Office; Mr. HAY Chandara, Deputy Chief Officer, ROW Management Office; Mr. TAUCH Sotharith, Officer; Mr. SONG Kimheng, Officer; Mr. NGEL Sovanarith, Officer; Dr. TSUCHIDA Takayuki, Team Leader; Mr. KUMAGAI Takahiro, Project Coordinator/Database Management; Ms. CHES Sophy, Project Assistant;
Agenda / Discussion Points	To discuss concrete countermeasures of ROW management in Laos and Cambodia based on the presentations given in the Seminar on 27 <sup>th</sup> September 2018 at Phnom Penh in Cambodia



(2) Agenda

Time	Topic	Speaker / Presenter, Participants
09:30-09:35	Opening Remarks	Mr. Deputy Director General, MPWT Laos
09:35-09:40	Explanation of Discussion Objectives and the Topics	Mr. NGEL Sovanarith, MPWT Cambodia
09:40-09:45	Brief Self-Introduction	All Participants
09:45-10:45	Concrete countermeasures of ROW Management in Laos and Cambodia (1)	All Participants (Chaired by Mr. CHEA Samnang, MPWT Cambodia)
10:45-11:00	<i>Break</i>	
11:00-12:00	Concrete countermeasures of ROW Management in Laos and Cambodia (2)	All Participants (Chaired by Mr. CHEA Samnang, MPWT Cambodia)
12:00-12:15	Wrap up and Acknowledgement	Mr. KHUON Kompheak, MPWT Cambodia
12:15-12:30	Closing Remarks	Mr. Deputy Director General, MPWT Laos
12:30-13:30	<i>Lunch Break</i>	
13:30-17:30	Visit Site of ROW Management	All Participants



### (3) Minutes of Discussion

#### **Opening remarks**

**(by Deputy Director General of Public Works and Transport Research Institute, MPWT Laos)**

- This discussion continues from the Seminar on ROW Management in Cambodia on 27<sup>th</sup> September, 2018; and
- Appreciate the JICA Team for the visit and share the experiences through the discussion.

#### **Explanation of Discussion Objectives and the Topics**

**(by Mr. NGEL Sovanarith, MPWT Cambodia)**

- Explain the purpose of the Technical Exchange in Third Country; and
- Explain the agenda/topics for the discussion.

#### **Brief Self-Introduction (by All participants)**

#### **Discussion on Concrete countermeasures of ROW Management in Laos and Cambodia**

**(Chaired by Mr. CHEA Samnang, ROW Office Chief, MPWT Cambodia)**

##### *Discussion on Legal Aspect:*

**Question 1:** According to Article 21 of Road Law, it is written that no construction is permitted in the ROW, in the case of necessary, the construction must be authorized by Public Road Management Authority. Therefore, what kind of construction is allowed inside of ROW? And what is the process?

**Answer 1:** According the Article 21 of Road Law, there is no construction is permitted, but only for the utilities (water supplies and electricity). In case people want to build access road, they need to get the permission first and follow the standard. People need to apply for the permission to management authorities in their own areas.

**Question 2:** We have learnt from your presentation that you are planning to register ROW. Would you like to explain the process? Which organizations are going to be involved? Do you think it will be successful?

**Answer 2:** We have a plan to do so. It is a Pilot Project supported by the World Bank (WB) at the Northern Part of Laos. We are going to discuss with local authorities, then do the survey. After that we are going to acquire the land. The organization that is going to work with us the Ministry of Natural Resources and Environment (MONRE). MONRE will issue the land title and MPWT of Laos is the land user.

**Question 3:** From issues on ROW management, your organization is still facing the lacking of enforcement of Road Law in remote areas, do you have any plan in the future to deal with it?

**Answer 3:** Yes, we have plans to enforce the law. However, we have faced the limited numbers of staff at District Office. There is not enough staff to go to all villages to talk or explain the people. Most of people do not understand the law. Still, we are trying to solve it step by step. On another hand, we have also tried to install ROW Poles in some provinces.

**Question 4:** Is compensation process mentioned only in Road Law? Do you have the Expropriation Law? Which organization strongly involve in the Compensation Process?

**Answer 4:** Actually, we have Degree on Technical Guideline on Compensation (for Mining, Dam and Road) from MONRE, approved by the Government in 2016. For every Road project, there is a Resettlement Committee at Central, Provincial and District Levels. Central committee is led by MPWT and MONRE; provincial level led by DPWT.

Here is the process of compensation. Provincial level will list the Affected People (AP) and affected structure; then calculate the unit cost, and consult with AP through workshop to get the consensus. Calculation should be referred to other projects also. After getting the agreement from AP, committee can proceed the compensation. However, in case there is a complaint, people can go to village office, then commune offices/commune committee, to district or provincial offices/committee. Finally, the case will go to Ministry of Justice, in case it cannot be solved at lower levels.

**Question 5:** So far, we have acknowledged that you have Road Law. Do you have other laws related to ROW Management? If you have, would you like to share with us?

**Answer 5:** There is the Degree on Technical Guideline on Compensation (for Mining, Dam and Road) from MONRE, approved by the Government in 2016.

***Discussion on ROW Management:***

**Question 1:** What are the main activities for ROW Management? And how to prevent the illegal ROW encroachment? And which method is the most effective one? For example, in Cambodia, we have installed ROW Poles, signboards, and done patrolling. Then so far, Patrolling is the most effective one.

**Answer 1:** In Laos, we do not have patrolling activities but we have also installed ROW Poles along the ASEAN highway and some National Roads (at peri-urban areas) at the Northern Part. We also put the information on the Cut-off Date to notice the people. Sometimes, people have removed the ROW Poles which were installed inside the paddy fields.

**Question 2:** If you find illegal encroachment, how do you notify illegal encroacher about the evacuation? And have you experienced any serious ROW encroachment? If yes, how did you solve the case? Did you cooperate with Police to solve the case? How do you record the progress and share related organizations?

**Answer 2:** If we find the illegal encroachment, DPWT will ask people to move out and not to build any structure. Then, we will issue the warning letter and village chief to witness our activities. If people still want to build temporary structure, they need to sign agreement with DPWT. The document will be kept at District Office. People need to move out without any compensation when the project is coming.

**Question 3:** According to your presentation, local people violated inside the ROW/borrow pits, quarries (houses, huts, shops) due to no space for residential plots in the northern part. How about other places or other parts of the country? How do you solve this problem? Is ROW (related to illegal encroachment or structures or buildings inside ROW) one of main issues for road improvement in your country?

**Answer 3:** We have faced the problems mostly only at Northern parts of the country because the Southern parts are the mountainous areas. In case at the Northern parts, if we need the borrow pits, we will acquire it. Yes, ROW illegal encroachment is one of main issues for road development in Laos.

**Question 4:** Do you compensate the illegal structures or buildings inside the ROW for any road development or improvement? If yes or no, what kind of procedures do you take/apply?

**Answer 4:** For some provinces, we compensate the relocation utilities. Here is the process of compensation. Provincial level will list the Affected People (AP) and affected structure; then calculate the unit cost, and consult with AP through workshop to get the consensus. Calculation should be referred to other projects also. After getting the agreement from AP, committee can proceed the compensation. However, in case there is a complaint, people can go to village office, then commune offices/commune committee, to district or provincial offices/committee. Finally, the case will go to Ministry of Justice, in case it cannot be solved at lower levels.

**Question 5:** Have you earned any profit from ROW Usage? For example, annual fee from utilities installed inside the ROW and advertisement signboard along the National Roads?

**Answer 5:** There is no profit because they are the state utility companies.

## **Wrapping up the Discussion**

**(by Mr. KHUON Kompheak, Road Safety Office Chief, MPWT Cambodia)**


- Discussion was fruitful, each country got to understand the current status of each country well;
- Hope MPWT Cambodia and Laos will maintain this collaboration for near future activities and project; and
- Thank for warm welcome and nice arrangement for the discussion meeting.

**Closing remarks**

**(by Deputy Director General of Public Works and Transport Research Institute, MPWT Laos)**

- We are happy to have such a good discussion. We have learnt from each other;
- Thank you JICA Project Team for organizing this meeting;
- We are looking forward for such good discussion meeting again; and
- Explain the site visit at National Road 13<sup>th</sup> North.

**(4) Site Visit**

Location	National Road 13 <sup>th</sup> North, 21km away from Vientiane Capital
Location Map	

**Activity at Site Visit**

- Along the way to the Site, Laos MPWT Officers showed the red written mark for road widening in the future;
- Explanation on the Project by Laos MPWT field surveyor: The road will be improved from 2 lanes to be 4 lanes road under the loan of WB and AIIB. The road is 58km.
- Laos MPWT Field surveyors explained the method of compensation process by using aerial photos from Drone, survey form and tablet to store the data.



Red arrow Mark: 2.3m more of land needed



Explanation on the Process of Field Survey



Field Survey by using aerial photo



Checking the point of Col (Corridor of Impact)

## 5. Third Country Visit to Thailand

### (1) Outline

Date & Time	25 <sup>th</sup> October 2018, 9:00-17:30
Place	Department of Highways, Ministry of Transport in Thailand
Attendees from Laos side	Dr. Punya Chupanit, Director of Bureau of International Highways Cooperation; Mr. Saneh Ningchaiyen, Director of Bureau of Right of Way; Mrs. Pichanan Aursudkij, HR Officer, DoH, Training Division; Ms. Julyporn Ruenrerng, HR Officer, DoH, Training Division; Ms. Nuttaporn Nutayasaku, HR Officer, DoH, Training Division; Mr. Wuttichai Amornprasitpol, Civil Engineer, DoH; and Mr. Marit Prusertim, Civil Engineer, DoH
Attendees from Cambodia side	Mr. CHEA Samnang, Chief Officer, ROW Management Office; Mr. KHOUN Kompheak, Chief Officer, Road Safety Office; Mr. HAY Chandara, Deputy Chief Officer, ROW Management Office; Mr. TAUCH Sotharith, Officer; Mr. SONG Kimheng, Officer; Mr. NGEL Sovanarith, Officer; Dr. TSUCHIDA Takayuki, Team Leader; Mr. KUMAGAI Takahiro, Project Coordinator/Database Management; Ms. CHES Sophy, Project Assistant;
Agenda / Discussion Points	To discuss concrete countermeasures of ROW management in Thailand and Cambodia based on the presentations given in the Seminar on 27 <sup>th</sup> September 2018 at Phnom Penh in Cambodia

	
Self-Introduction by Cambodia MPWT Officials	Explanation on CESCOR Project by TF Members



(2) Agenda

Time	Topic	Speaker / Presenter, Participants
09:00-09:05	Opening Remarks	Director of DoH, Thailand
09:05-09:15	Brief Self-Introduction	All Participants
09:15-09:25	Explanation on CESCOr Project	Mr. KHUON Kompheak, MPWT Cambodia
09:25-09:55	Concrete countermeasures of ROW Management in Laos and Cambodia (1)	All Participants (Chaired by Mr. CHEA Samnang, MPWT Cambodia)
09:55-10:00	Wrap up and Acknowledgement	Mr. TAUCH Sotharith, MPWT Cambodia

(3) Minutes of Discussion

**Opening remarks**

**(By Director of Bureau of International Highways Cooperation, Department of Highways, Ministry of Transport, Thailand)**

- Thank JICA Project Team and Cambodia MPWT officials for coming here and continuing the discussion after Seminar in September in Cambodia; and
- DoH staff will support team for the discussion and the site visit.

**Brief Self-Introduction (by all participants)**

**Explanation on CESCOr Project**

**(by Mr. KHUON Kompheak, MPWT Cambodia)**

- Briefly explain the objectives, expected outputs and other activities of CESCOr; and
- Explain the activities of Pilot Project of CESCOr.

**Discussion on Concrete countermeasures of ROW Management in Laos and Cambodia  
(Chaired by Mr. CHEA Samnang, ROW Office Chief, MPWT Cambodia)**

***Discussion on Legal Aspect:***

**Question 1:** We have learnt from the presentation and discussion that you register ROW as national land of DoH after land acquisition. Would you like to explain the process? Which organizations are involved? What certificates are issued for national and registration?

**Answer 1:** DoH has the procedure to register ROW as followed:

- Create the ROW map showing the boundary of land to ask for compensation (The Bureau of Planning takes responsibility for marking the starting and ending points, setting the width of ROW, and determining the number of highways);
- Create the highway-controlled lists according to the width and the length of ROW;
- An officer from the Bureau of ROW submit the highway-controlled lists and the ROW map to the maintenance sector; and
- The maintenance sector has to take care of the ROW map and the controlled lists. If there is any copy, they have to make sure that the copy is accurate.

The involving organization includes initial price committees who need to evaluate the compensation. Besides DoH officers, there are also officers from Ministry of Interior, Department of Lands and Local Government. Local Land Office has a duty to measure the size of land and record or edit in the document. For DoH, we have:

- Bureau of ROW as a leader has a duty to manage, expropriate the land, enforce the laws and send the officer to the local areas;
- Bureau of Highways (18 places over the country) has to inspect the land, approve the compensation and make a payment; and
- Highway Districts, Highway Construction Center have a duty to do expropriation, acquisition and maintaining ROW.

To acquire and expropriate the land, the local land office registers and records the expropriated land as highways. DoH will not issue any additional document. All the details are ready in ROW plan.

**Question 2:** According to your presentation, your organization uses law enforcement for ROW Management. Can you tell me what kind of punishment for illegal encroachment can be enforced effectively?

**Answer 2:** The person who encroach ROW shall be punished with fine not exceeding 60,000 baht, or imprisonment not exceeding 3 years. The person who do not move out of the expropriated area shall be punished with fine not exceeding 5,000 baht, or imprisonment not exceeding 3



months. Moreover, officers have a right to demolish buildings, and the demolition will be paid by the owner. In case that the owner obstructs the demolition, he/she shall be punished with fine not exceeding 10,000 baht, or imprisonment not exceeding 6 months.

**Question 3:** From issues on ROW management, your organization is still facing the lacking of enforcement in residential areas, do you have any plan in the future to deal with it?

**Answer 3:** To enforce the law, the officers have to take actions seriously. Also, they have to frequently survey their responsible area to prevent the encroachment. If the officers cannot fulfil their action well, we will replace the person who can take care of ROW better.

**Question 4:** In case of ROW has a long-term blank until the start of construction after land acquisition, do you have any legal framework to provide the permission of temporary usage within ROW for local people?

**Answer 4:** As per the National Highway Law, Expropriation Law and Guideline of the DoH, people or other organizations are not allowed to use ROW at all to prevent the trouble to moving out in the future; except the construction of entrance or exit way (access road) to their area by following the standard drawings. Permission is given for the installation of advertising billboards which have been paid a fee. Moreover, government agencies involved in public utilities such as electricity or water lines can use the ROW for free of charge.

***Discussion on ROW Management:***

**Question 1:** What are the main activities for ROW management? And how to prevent the illegal ROW encroachment? And which method is the most effective one? For example, in Cambodia, we have installed ROW Poles, signboards, and done patrolling. Then so far, Patrolling is the most effective one.

**Answer 1:** The main activities for ROW management are creating awareness for the staff to look after ROW and doing Public Relations (PR) and Public Participation (PP) continuously. In order to prevent the illegal ROW encroachment, land acquisition of ROW of all plots are needed. Then, every building that received compensation of expropriation has to move out or remove from ROW promptly. The intruder who has trespassed the ROW will be urged to move out or be immediately enforced the law. The most effective one is using the measure enforcement and action in Administrative Procedure with concurrently PR and PP.

**Question 2:** If you find illegal encroachment, how do you notify illegal encroacher about the evacuation? And have you experienced any serious ROW encroachment? If yes, how did you

solve the case? Did you cooperate with Police to solve the case? How do you record the progress and share related organizations?

**Answer 2:** If the encroachment was found during the ROW management, ROW officers have to inform encroachers to stop their construction. A building which was constructed as mentioned before will not be paid. We have also experienced the serious ROW encroachment cases. Most of serious case ROW encroachment are lands that were already expropriated, but DoH did not use it for construction due to the changes of road alignment.

To fix the problem, firstly, the local officers will negotiate with the encroachers to meet the mutual agreement by allowing for the period of time. When the date is due, if there is still not any progression, we will warn them seriously. After that, Law Enforcement and Administrative Procedure will be used. During the procedure, if the encroachers think they would face a lot of damages, most of them will negotiate for 7 to 15 days to demolish and move by themselves. All cases need cooperation from the police to observe the procedure, protect the officers and arrest anyone who might hinder until the procedure accomplished.

To record the progression is the duty of Highway Depot Leader. As for the officers from Bureau of Land Expropriation, they will work only for the case that need the compensation using Land Expropriation Law.

**Question 3:** Is ROW (related to illegal encroachment or structures or buildings inside ROW) one of main issues for road improvement in your country?

**Answer 3:** Yes, it is for the serious cases as mentioned above. It consumes time and labor.

**Question 4:** For applying standard drawings, the standard drawing will be applied national highway development to cooperate with related utility provider such as electricity cable, water pipe and so on. In case during road development project with managed by DoH, some provider does not follow standard drawing such as wrong installation, what kind of countermeasure or punishment will be taken?

**Answer 4:** Highway Districts, Office of Highways or an involved sector should consider ROW drawing together with ROW List to cooperate with utility providers and not to cause any problems to DoH activities.

During the construction, some government sectors do not follow the standard drawing, DoH or construction sector will have to force and might give sometime to fix the problem. If they still not follow the drawing, DoH might cancel the permission and will not give any permission to those sectors to operate anything in ROW in the future. So, if this happens, those sectors will have to fix their problems immediately (by threatening them and making them feared of cancelling permission).

**Question 5:** Have you earned any profit from ROW usage? For example, annual fee from utilities installed inside the ROW and advertisement signboard along the National Roads?

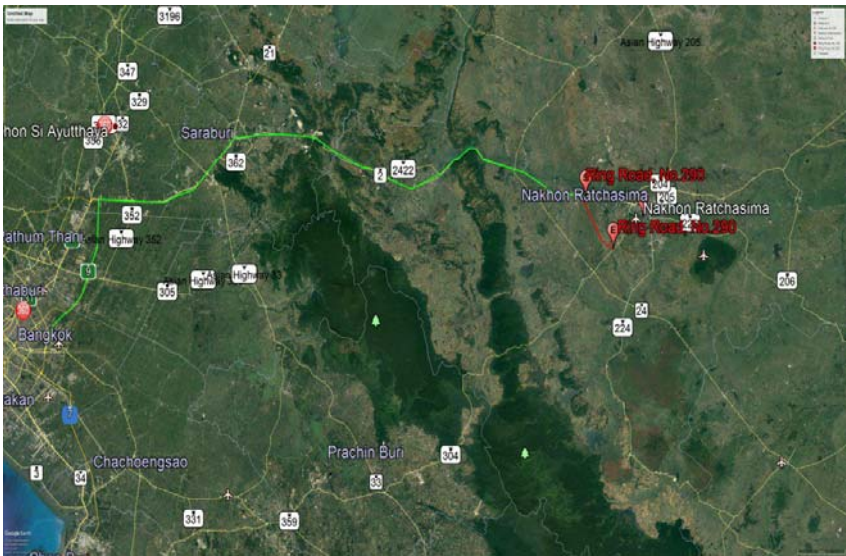
**Answer 5:** Permission is given for the installation of advertising billboards which have been paid a fee. Moreover, government agencies involved in public utilities such as electricity or water lines can use the ROW for free of charge.

**Wrapping Up remarks**

**(by Mr. TAUCH Sotharith, Cambodia MPWT)**

- Thank for warm welcome and good discussion by answering each discussion point; and
- Hope to work with DoH for other future activities.

**(4) Site Visit**

Location	Nakhon Ratchasima Province (Nakhon Ratchasima Ring Road on Highway No. 290 Construction Project)
Location Map	

**Activity at Site Visit**

- Brief Explanation on Ring Road Construction Project by District Officers of DoH;
- Discussion on the ROW Management and compensation Process;
- Discussion on how to prevent illegal encroachment after the construction finished; and
- The visit to site to check the construction work and more discussion on ROW management based on the Map and actual site.

	
Brief Explanation on Ring Road Project	Site Visit
	
Explannation on Construction Progress	Group Photo at Site

## 6. Main Understandings ROW Management framework among neighboring countries

Based on the discussion during the seminar on ROW management in Cambodia and the discussion and site visit in Laos and Thailand, the differences between three countries (Cambodia, Laos and Thailand) are in the table below:

Cambodia	Laos P.D.R	Thailand
1- Legal Concept		
<ul style="list-style-type: none"> <li>- Land Law: ROW belongs to Public state land;</li> <li>- Road Law</li> <li>- 66% of private land already registered (achievement of MLMUPC, 2017)</li> <li>- Sub-decree No. 197 on</li> </ul>	<ul style="list-style-type: none"> <li>- There is only Road Law</li> <li>- Road Law 1999: width of ROW was 25m</li> <li>- Road Law 2016 (amended version: width of ROW is 40-60 meters (can be different for mountainous area)</li> </ul>	<ul style="list-style-type: none"> <li>- Highways Act (all the national road in Thailand are national high way)</li> <li>- There is Royal Decree for specific road. Royal decree will mention the width of ROW and design</li> </ul>

ROW - MOU: MPWT & Provincial Governors		
<b>Improvement for Cambodia:</b> Cambodia has enough law documents; however, there are problems with law implementation. Cambodia also has law to punish illegal encroachers.		
2- Project Fund/Social Support		
- In case of Donor Projects, Donors insists MPWT to compensate. - Follow the resettlement policies of Donors (based on signed loan agreement). - There is no training division/center at MPWT.	The donor also paid for the compensation.	- There is no Donor Project. There is no compensation for illegal encroachers. - Almost 100% of private land already registered (from 1920-) - There is a training division at DoH to train the district officers.
<b>Improvement for Cambodia:</b> - MPWT needs to follow the resettlement policies of Donors. - In future, there will be no re-compensation to illegal encroachers inside the ROW. - To prevent the re-encroachment, education is required and enforcement of the duties of authorities is also required. - Training to Trainer is important to local officials. Therefore, training center is needed.		
3- ROW Management		
- Currently, there is some data on CSI for some National Roads. Now, CESCO is conducting the CSI along National Road No.5. - Conducting census, the data of ROW illegal encroachment (ROW Inventory: paper base). - MPWT has no data on Resettlement and Land	- Also conduct the CSI (aerial photo, and interview with structure owners) - MPWT keeps the resettlement Data	- Land Registration Map - DoH Keeps all the information on land

Registration.		
<b>Improvement for Cambodia:</b> - To support ROW activities for mapping and patrolling after CESCOr project in year 2020. - To assign the ROW Management Inspectors (by MPWT). - To ask for the collaboration from MLMUPC for the updated data on Land Registration. - To ask MEF to share the detailed resettlement information/data.		
4- Counter Measure/IEP		
- Patrol is the most effective way - 2 meters from the edge of ROW for utilities - ROW pole Installation (not all National road due to limited budget)	- By section of National Road 13th North, to install ROW Poles - ROW pole Installation (not all National road due to limited budget)	- Patrol is the most effective way - 30cm to 2m from the edge of ROW for utilities - There is training center. - Frontage road & side station for business -ROW pole Installation (one pole at every 100m)
<b>Improvement for Cambodia:</b> - Will provide more trainings and more benefits/incentives to local officials to prevent illegal encroachers. - Combination between soft and hard measures is needed (for example education and installation of ROW poles). - Frontage road & side station for local business.		

## 7. Specific Outcomes related to ROW Management Issues and Improvements

- **Lesson-learns/Outputs:**

- Knowledge transferred from MPWT to DPWT & district officers regarding the Law and Practice (to deal with illegal encroachers) like in Thailand by DoH Training Division.
- Training center is needed.
- Establish district working group work with legal representative (lawyer) to deal with illegal encroacher;
- Develop the frontage road for local business.
- Should have ROW Map.
- Punish the officials who neglect their duties based on Law.

- **Recommendation by Project:**

- For the Current Status Identification (CSI):

- 1- Better collaboration between MPWT and MLMUPC for clear boundaries between State land and private land (there is Land Registration Map);
- 2- Registration of ROW as State Property;
- 3- Consideration on livelihood or safety program for Road Development Project to avoid the re-encroachment.

- For IEP (Soft Recommendation):

- 1- Enforcement of Law on Illegal ROW Encroachment, in case of Thailand, district officers will be jailed if they neglected their duties; and
- 2- Public Awareness on Right of Way through Public Consulting Meeting (PCM), including ROW context in Curriculum of school.
- 3- Combination between soft and hard measures is needed (for example education and installation of ROW poles).

- For IEP (Hard Recommendation):

- 1- Installation of ROW Poles (Rural) / ROW Marking Line (Urban)
- 2- Proper Installation of Utilities based on the Road Design
- 3- Installation of Fence (at School, Hospital and Factory for Road Safety, at Rural Area to show the boundary of ROW)
- 4- Installation Signboard
- 5- Tree Planting as the boundary of ROW

- For Development Strategy:

- 1- Consideration on development of Roadside station to eliminate the mobile stores and to ensure the traffic safety;
- 2- Consideration on Frontage/service Road development to avoid the traffic accidents and congestion at/on high-speed roads; and
- 3- Development or construction of road from the ROW boundary and keep the middle space for future development in order to prevent the illegal encroachment.

**Attachment: Sign-in Sheet of the Seminar and the Meetings**

1- Seminar on ROW Management on 27<sup>th</sup> September 2018 at SUNWAY Hotel, Phnom Penh, Cambodia

<b>No</b>	<b>Name</b>	<b>Position</b>	<b>Department/Ministry</b>	<b>Phone</b>
1	Kheang Yanat	Deputy Director	ADMIN/MPWT	
2	Khuon Kompheak	Chief Officer	RID/MPWT	
3	Koy Samrithvisot	Deputy Chief Officer	PID/MPWT	
4	Prom Bunthorn	Officer	ADMIN/MPWT	
5	Thorn Chhorda	Technical officer	PID/MPWT	
6	Eam Sokchea	Deputy Chief Officer	PID	
7	Leng Song	Deputy Director	Road Maintenance Dept.	
8	Chea Samnang	Chief Officer	RID/MPWT	
9	Kaing Theara	Officer	RID/MPWT	
10	Bour Chhaiya	Deputy Chief Officer	DOP/MPWT	
11	Hay Chandara	Deputy Chief Officer	RID/MPWT	
12	Samrangdy Namu	Deputy General Director	General Directorate of Techniques	
13	Sao Premarak	Deputy Chief Officer	RID/MPWT	
14	Hinson Oudom	Vice Chief Officer	RMD/MPWT	
15	Kheng Somethea	Chief Officer	MPWT	
16	Kong Youreth	Chief Officer	PID/MPWT	
17	An Menghour	Officer	ICD/MPWT	
18	Peang Samoeun	Chief Officer	ICD/MPWT	
19	Lay Puthineath	Officer	ICD/MPWT	
20	Robinson Shrestha	Project Team Member	CTII	
21	Ouk Bo	Officer	PID/MPWT	
22	Sokun Piseth	Deputy Chief Officer	RID/MPWT	
23	Pin Vuthea	Director	ICD/MPWT	
24	Long Davuth	Officer	RID/MPWT	
25	Takayuki Tsuchida	JICA Team Leader	JICA Project Team	
26	Tsuyoshi Ito	EIA Expert	JICA Project Team	
27	Mr. saneh Ningchafyen	Director	DoH, Thailand	



28	Kazumasa Sanui	Logistics TCP	MPWT	
29	Hideaki Iwase	JICA RFA	JICA	
30	Song Kimheng	Officer	RID/MPWT	
31	Son Monysorphorn	Officer	DOF/MPWT	
32	Keat Chanrotha	Officer	DOF/MPWT	
33	Heng Narin	Deputy Director	ADMIN/MPWT	
34	Jiraroth Sukolrath	Civil Engineering	DoH, Thailand	
35	Ms. Mailoryang Nengchue	Technical staff	MPWT Lao PDR	
36	Toshimasa Kawasaki	JICA Expert	JICA	
37	Heng Visal	Deputy Chief Officer	MPWT	
38	Keo Sam An			
39	Ngel Sovanarith	Officer	RID/MPWT	
40	Ms. Pakamoranori	Expert	JICA	
41	Ms. Ches Sophy	Assistant	JICA Project Team	
42	Douk Khemera	Assistant	JICA Project Team	
43	Mut Samon	Assistant	JICA Project Team	
44	Bun Sereyvuth	Assistant	JICA Project Team	
45	Penh Socheat	Assistant	JICA Project Team	
46	Mr. Somsanouk	Deputy Director	PTRI/Laos MPWT	
47	Mr. Lay Nara	Officer	DOP	
48	Mr. Oti Masaya	Expert	JICA/MPWT	
49	Mr. Kumagai Takahiro	JICA Project Member	JICA Project Team	
50	Ms. Nakayama Makiko	JICA Project Member	JICA Project Team	

**ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ / List of Participant**

ປັນຫາສາລິກຸ່ມ (Discussion Topic): ການຄຸ້ມຄອງເຂດສະຫງວນຂອງທາງໃນ ສປປ ລາວ ແລະ ລາຊະອານາຈັກ ກຳປູເຈຍ  
(Concrete countermeasures of ROW management in Laos and Cambodia)

ສະຖານທີ່ (Venue): ຫ້ອງປະຊຸມຊັ້ນ 4 ຂອງ ສຮູບ (4th floor meeting room of PTRI)

ວັນທີ: 23 ຕຸລາ 2018 / Date: October 23, 2018

ລ/ດ Item	ຊື່ ແລະ ນາມສະກຸນ Name and Surname	ຕຳແໜ່ງ Position	ພາກສ່ວນ Office	ໂທລະສັບ Phone Number	ອີເມວ Email	ລາຍເຊັນ Signature
1	ທ້າວ ວິໄນ ວິໄນ	ນັກວິຊາການ	ສຳນັກງານ			
2	ທ້າວ ວິໄນ ວິໄນ	ນັກວິຊາການ	ສຳນັກງານ			
3	ທ້າວ ວິໄນ ວິໄນ	ນັກວິຊາການ	ສຳນັກງານ			
4	ທ້າວ ວິໄນ ວິໄນ	ນັກວິຊາການ	ສຳນັກງານ			
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6	ທ້າວ ວິໄນ ວິໄນ	ນັກວິຊາການ	ສຳນັກງານ			
7	ທ້າວ ວິໄນ ວິໄນ	ນັກວິຊາການ	ສຳນັກງານ			
8	Hiroshi NOMURA	JICA Expert	MPWT			
9	ທ້າວ ວິໄນ ວິໄນ	ນັກວິຊາການ	ສຳນັກງານ			
10	ທ້າວ ວິໄນ ວິໄນ	ນັກວິຊາການ	ສຳນັກງານ			
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**ລາຍຊື່ຜູ້ເຂົ້າຮ່ວມກອງປະຊຸມ / List of Participant**



ປັນຫາສາລິກຸ່ມ (Discussion Topic): ການຄຸ້ມຄອງເຂດສະຫງວນຂອງທາງໃນ ສປປ ລາວ ແລະ ລາຊະອານາຈັກ ກຳປູເຈຍ  
(Concrete countermeasures of ROW management in Laos and Cambodia)

ສະຖານທີ່ (Venue): ຫ້ອງປະຊຸມຊັ້ນ 4 ຂອງ ສຮູບ (4th floor meeting room of PTRI)

ວັນທີ: 23 ຕຸລາ 2018 / Date: October 23, 2018

ລ/ດ Item	ຊື່ ແລະ ນາມສະກຸນ Name and Surname	ຕຳແໜ່ງ Position	ພາກສ່ວນ Office	ໂທລະສັບ Phone Number	ອີເມວ Email	ລາຍເຊັນ Signature
1	Touh Satharith	official	MPWT CAMBODIA			
2	KHUN KOMPREAK	Chief officer	-H			
3	NEEL SVANARITH	official	-H			
4	SONG KITHENG	official	MPWT, Cambodia			
5	HAI CHANDARA	Deputy office	MPWT, Cambodia			
6	CHEA SAMNANG	Chief officer	MPWT Cambodia			
7	Takayuki Tsukuda	Team Leader	JICA Project Team			
8	CHES Sophy	Project Assistant	JICA Project Team			
9	Kunugi Takahiro	Project Coordinator	JICA Project Team			
10						
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3- Discussion at Thailand, DoH on 25<sup>th</sup> October 2018



THE PROJECT FOR CAPACITY ENHANCEMENT  
 ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
 IN IMPLEMENTING AGENCY IN ROAD SECTOR  
 IN THE KINGDOM OF CAMBODIA (CESCOR)

Date: 25<sup>th</sup> Oct 2018  
 Time: 9.00am  
 Location: Doh, Thailand  
 Topic: Thailand & Cambodia Discussion

**Attendance List**

No	Name	Position	Department/Ministry	Phone	E-mail	Signature
1	Dr. Toshihide Takayuki	Team leader	JICA Project Team			
2	Mr. Kumagai Takahiro	Project Coordinator	JICA Project Team			
3	Ms. CHEE Sophy	Project Assistant	JICA Project Team			
4	Mr. CHEA Samnang	ROW office chief	Cambodia MPWT			
5	Mrs. Pichana Amsutthij	HR officer	DOH, Training Division			<i>[Signature]</i>
6	Jitporn Aueerong		Department of Highways			<i>[Signature]</i>
7	Nuttoporn Nutajong		Department of Highways			<i>[Signature]</i>
8	Nuttichai Anompranit	Civil Engineer	Department of Highways			<i>[Signature]</i>
9	Havit Prasartim	Civil Engineering	Department of Highways			<i>[Signature]</i>
10	<b>MR. SANEH NIBDOLHAYAN</b>		<b>DOH</b>			<i>[Signature]</i>

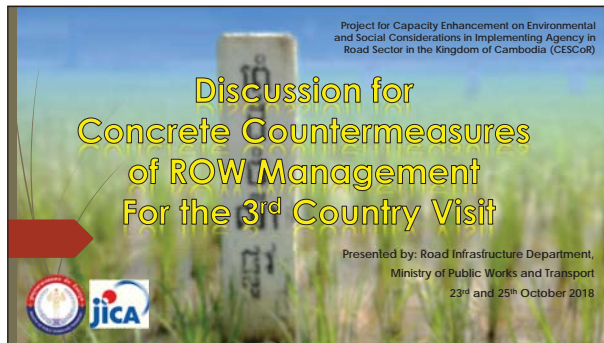
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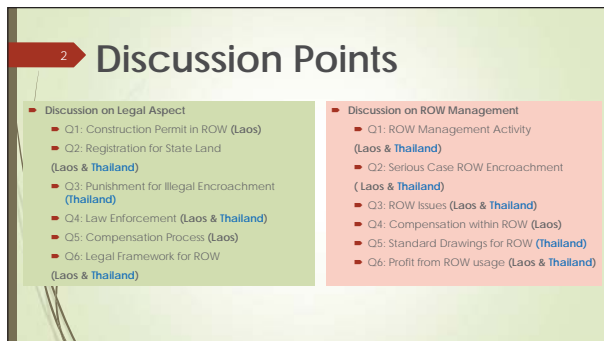
THE PROJECT FOR CAPACITY ENHANCEMENT  
 ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
 IN IMPLEMENTING AGENCY IN ROAD SECTOR  
 IN THE KINGDOM OF CAMBODIA (CESCOR)

No	Name	Position	Department/Ministry	Phone	E-mail	Signature
11	Mr. Khoun Komphant	Road safety office chief	CAMBODIA MPWT			
12	Mr. Hay Chandara	Deputy chief officer	ROW office, MPWT			
13	Mr. Touch Sotharith	officer	Cambodia MPWT			
14	Mr. Song Kimheng	officer	Cambodia MPWT			
15	Mr. Ngel Sovannarith	officer	Cambodia MPWT			
16	Dr. Panya Chhanit	Director	Bureau of International Highways cooperation, Thailand			

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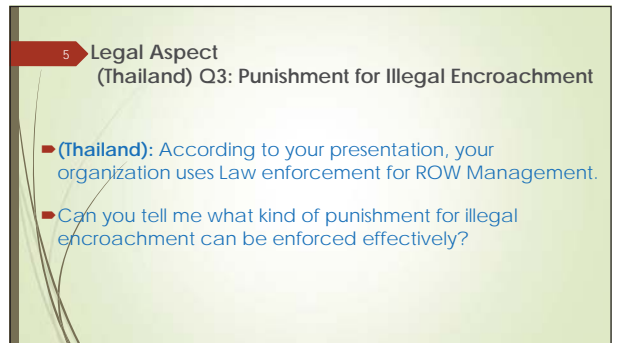


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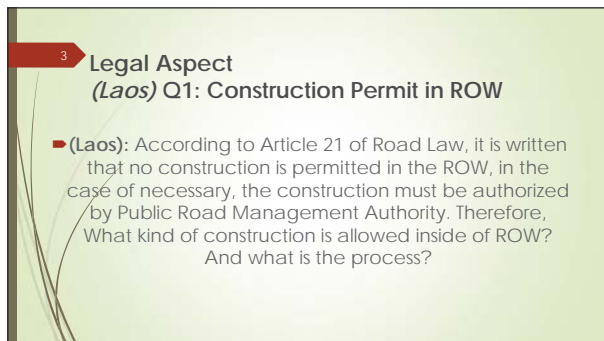


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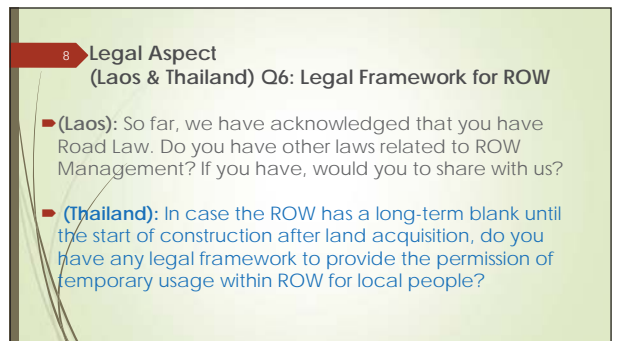


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9 **ROW Management (Laos & Thailand) Q1: ROW Management Activity**

(Laos and Thailand):

- What are the main activities for ROW management? And How to prevent the illegal ROW encroachment?
- Which method is the most effective one?

For example, in Cambodia, we have installed ROW Poles, signboards, and done patrolling. Then so far, Patrolling is the most effective one.

9

10 **ROW Management (Laos & Thailand) Q2: Illegal ROW Encroachment**

(Laos and Thailand):

- If you find illegal encroachment, how do you notify illegal encroacher about the evacuation? And, have you experienced any serious ROW encroachment?
- If yes, how did you solve the case?
- Did you cooperate with Police to solve the case?
- How do you record the progress and share related organizations?

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13 **ROW Management (Thailand) Q5: Standard Drawings for ROW**

- (Thailand): For applying standard drawings, drawing will be applied national highway development to cooperate with related utility provider such as electricity cable, water pipe and so on.
- In case during road development project which managed by DoH, some provider does not follow standard drawing such as wrong installation, what kind of countermeasure or punishment will be taken?

13

14 **ROW Management (Laos & Thailand) Q6: Profit from ROW usage**

(Laos and Thailand):

- Have you earned any profit from ROW usage?
- For example, annual fee from utilities installed inside the ROW and advertisement signboard along the National Roads?

14

7

11 **ROW Management (Laos & Thailand) Q3: ROW Issues**

- (Laos): According to your presentation, local people violated inside the ROW/borrow pits, quarries (houses, Huts, Shops) due to no space for residential plots in the northern part. How about other places or other parts of the country? How do you solve this problem?
- Is ROW (Related to illegal encroachment or structures or buildings inside ROW) one of main issues for road improvement in Laos?
- (Thailand): Is ROW (Related to illegal encroachment or structures or buildings inside ROW) one of main issues for road improvement in Thailand?

11

12 **ROW Management (Laos) Q4: Compensation within ROW**

- (Laos): Do you compensate the illegal structures or buildings inside the ROW for any road development or improvement?
- If yes or no, what kind of procedures do you take/apply?

12

6

15 **THANK YOU SO MUCH FOR YOUR KIND COOPERATION**

15

8



Project for Capacity Enhancement on Environmental and Social Considerations  
in Implementing Agency in Road Sector in the Kingdom of Cambodia

## 3rd Technical Exchange in the Third Country

May 2019

CTI Engineering International Co., Ltd.  
Environment and Social Infrastructure Consultant Co., Ltd.  
Hanshin Expressway Co., Ltd.

3rd May 2019

## Report for International Association for Impact Assessment (IAIA) Participation

CESCoR

### 1. Outline

(1) Place: Brisbane, Australia

(2) Duration: 27 Apr - 3 May

(3) Participants:

- H.E Tauch Chankosal, Secretary of State, MPWT
- H.E Nou Vaddhanak, Director General, MPWT
- Mr. Chhim Phalla, Director, MPWT
- Mr. Chea Samnang, Chief of Office, MPWT
- Dr. Takayuki Tsuchida, Chief of JICA Team
- Mr. Akira Yamashita, Deputy Chief of JICA Team

(4) Presentation and Poster

Paper: Right of Way Management System in Cambodia

Poster: JICA's Right of Way Management Project in Cambodia

### 2. Schedule

	<b>Day</b>	<b>Schedule</b>
1	27-APR (SAT)	1600 Meet at PNH Airport 1825 PNH - 2125 SIN (SQ5007)
2	28-APR (SUN)	0045 SIN - 1035 BNE (SQ255) 1100 Airport - 1200 Hotel
3	29-APR (MON)	0900 World Bank Day Session 1300 Opening / Poster Session 1700 Welcome Reception
4	30-APR (TUE)	0900 IAIA (-18:00) 1230 Poster Core Time
5	1-MAY (WED)	0900 IAIA (-18:00) 1930 Conference Dinner
6	2-MAY (THR)	0900 IAIA (-17:00) 1430 Presentation by Mr. Samnang2355 BNE - (SQ246)
7	3-MAY (FRI)	0620 - SIN 0740 SIN - 0840 PNH



### 3. Summary Reporting

#### (1) World Bank Day

The delegate participated special event by World Bank regarding their new environmental policy called Environmental and Social Framework (ESF) which replaced former safeguard policies. According to their explanations, one of the biggest changes on mindset is social impact. In the past policies, social impacts only focus on involuntary resettlement and indigenous people. However,



the ESF may pay much attention to other fields, such as labor environment, gender issues, public engagement, and so on. The importance of capacity building for recipient country was also focused in terms of implementation of ESF.

#### (2) Welcome Reception

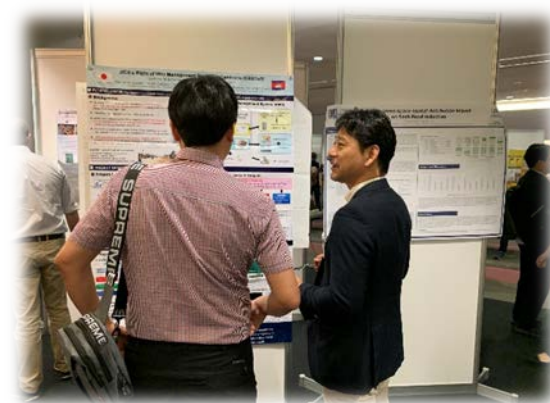
The delegate met with participants from different countries. Mr. Kamijo from JICA Research Institute asked the present situation of EIA in Cambodia and the delegate replied the latest progress of Environment Code and other legal frameworks in Cambodia. Dr. Harashina, the former president of IAIA, provided greeting talks on importance of EIA and the delegate replied past experiences in Cambodia under JICA's cooperation, such as National Road No.1 Project and Neak Loeung Bridge Project.



#### (3) CESCOR Poster Session (Core Time)

During the core time of the poster session, many participants visited CESCOR's poster and CESCOR team introduce the project and gave further explanation to them. Major discussions were described as below:

- A consultant from United Kingdom who had working experiences in Cambodia under ADB climate change project exchange his past learning on road construction.
- A professor from a university in New Zealand asked questions on measures of ROW management, such as soft approaches of public consultation and notice board.
- A professor and group of members from Nanjing University of China exchanged learning on resettlement.
- A Singaporean developer share his experiences of natural park.
- Ministry of Electricity and Energy from Myanmar visited and asked contents of CESCOR.



(4) CESCOr Paper Presentation (by Mr. Chea Samnang)

Mr. Samnang, Chief of ROW Office, gave presentation regarding concept, methodology, and activities of CESCOr briefly in the specific session of social impact chaired by Mr. Francis from the Millennium Challenge of US. After his 12 minutes presentation, several comments and questions were raised from audiences described as below:



(Question-1) Which is better for ROW mapping by using UAV photo or satellite photo?

(Answer-1) UAV photo has advantages in terms of resolution but takes much cost.

(Question-2) Are there any regulations for UAV flight in Cambodia?

(Answer-2) Yes, we have. However, the project is government project. So, no problem.

(Question-3) What kinds of compensation are prepared for resettlement in Cambodia?

(Answer-3) Land within ROW is not compensated, but structures are compensated by market value.

(Question-4) Beside the cost for UAV, what kind of expenses are required? How about the soft wears?

(Answer-4) Soft wears such as QGIS and others in the presentation are principally open source and free.

(5) Official Dinner

CESCoR team participated official dinner of IAIA and met many different kinds of participants.



(6) Closing Session

CESCOr team attended the closing session and celebrated JICA's institutional award of IAIA19.

(7) Others

CESCOr team attended different thematic sessions, such as Pacific oceans, Chiba University of Commerce, and so on to get the latest knowledge on environmental and social considerations.

There are several exhibitions by private sectors, such as Exxon Mobil in PNG, and the team also tried new environmental technology for biodiversity and infrastructure. Through the period of conference, CESCOr member can greet and talk with different countries people, such as Myanmar, Viet Nam, Korea, China, Singapore, and so on.



#### 4. Conclusion

The team could widely informed CESCOr's activities in Cambodia with JICA's cooperation to participants of IAIA members in different country through presentation, poster, and discussion in the conference venue. Thus, participation in IAIA19 was big success in terms of CESCOr's public relation to IAIA member who includes development partners as well as developing countries.

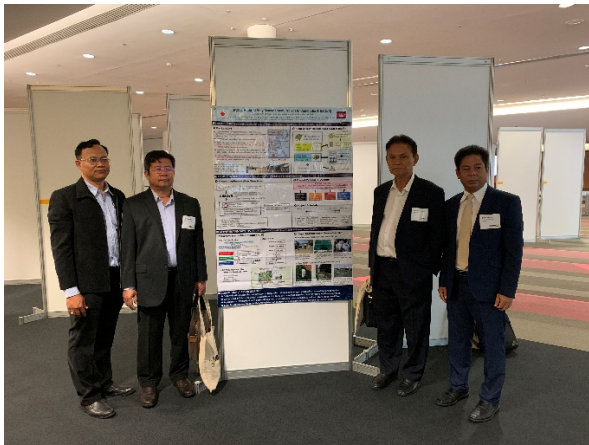
Particularly, JICA's challenge on ROW management by CESCOr attracted Asian countries including China, Korea, Vietnam, Myanmar, Singapore and so on. Nanjing university offered to invite the team for their resettlement seminar in the future and a representative from World Bank Vietnam showed much interests on UAV method for environmental and social considerations. A director from Ministry of Environment, Myanmar, also was interested in JICA's cooperation as CESCOr.

On the other hand, the team also obtained knowledges and learning from other participants' presentation, seminar, and any other opportunities through IAIA19. Especially, special session for WB's new Environmental and Social Framework (ESF) was useful to understand future trend of the safeguard policy.

Based on the results of IAIA participation, it is confirmed among the team that feedback of our activities and results to neighboring countries, such as Indochina region where CESCOr visited as the third country technical exchange is quite important to spread our output and formulate new opportunities for ROW management in terms of Environmental and Social Considerations.

Four Cambodian officers of MPWT participated in IAIA19 expressed gratitude to JICA for giving opportunity to exchange learning and experiences with different groups of IAIA members. Those key persons from MPWT recognized again importance of environmental and social considerations for sustainable development of infrastructure in Cambodia. Through out the IAIA19, Sustainable Development Goals (SDGs) were mentioned repeatedly in many reports and presentations. They showed expectation of further technical cooperation from JICA for the sustainable transportation in urban areas with considerations on social and environmental issues. CESCOr will discuss further to formulate following cooperation between JICA and MPWT to realize environmentally friendly and safe transportation.

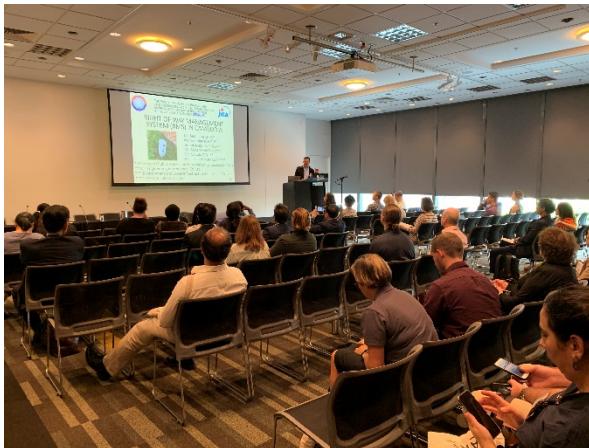
Photos during IAIA



MPWT officials with CESCoR poster



H.E Chankosal and Dr. Harashina, former president of IAIA



Room for Mr. Samnang's presentation



CESCoR member listening a session



Congress center for IAIA at Brisbane



Closing Session of IAIA19

# RIGHT OF WAY MANAGEMENT SYSTEM IN CAMBODIA

Mr. Samnang CHEA\*, Mr. Vaddhanak NOU\*, Dr. Takayuki TSUCHIDA\*\*, Mr. Akira YAMASHITA\*\*\*, Mr. Masaki OCHI\*\*, Mr. Takahiro KUMAGAI\*\*\*\*

## Abstract

Ministry of Public Works and Transport of Cambodia (MPWT) supported by Japan International Cooperation Agency (JICA) has developed a right-of-way (ROW) management system by using Unmanned Aerial Vehicle (UAV) mapping and the GIS database to identify current situation of obstacles within ROW and to prevent new illegal encroachment along the national roads.

## 1. Introduction

Illegal encroachment is one of the major tackling issues of road improvement projects in Cambodia, especially projects for widening of exiting national roads. As a road management authority, MPWT had been tried to keep ROW lines for the future widening project, however, illegal encroachment within ROW are still commonly observed due to lack of ROW management system. Considering that situation, MPWT launched the specific project, which is called CESCOR (Capacity Enhancement of Environment and Social Considerations in Implementing Agency in Road Sector), to establish integrated ROW Management System (RMS) with assistance from JICA.

This paper mainly introduces Current Status Identification (CSI), which has been developed with technique of UAV mapping and the GIS database. CSI plays important roles for RMS to record illegal structures, illegal land use, and other obstacles within ROW at a certain date (cut-off-date). Aerial photos taken by UAVs are assembled and translated into continuous orthophotograph with coordination as the first step of analyzation in the back-office. Following land surveys can add further properties on target object, such as houses, kiosks, land use and etc., for the final map (ROW Management Map, RMM) and database (ROW Management Database, RMD).

After establishment of RMS which mainly consists of RMM and RMD, monitoring teams of ROW management, such as local authorities, can use RMS for their periodical maintenance of road and update any changings within ROW including new encroachment by using tablets connecting to RMD. Thus, CSI supported by RMS is followed by the next step of Illegal Encroachment Prevention (IEP) including education, fencing, and so on, to reduce the number of encroachments. These activities may contribute to reduce both impact on illegal Project Affected Persons (PAP) and cost on compensation for resettlement when road widening projects come to the area in the future.

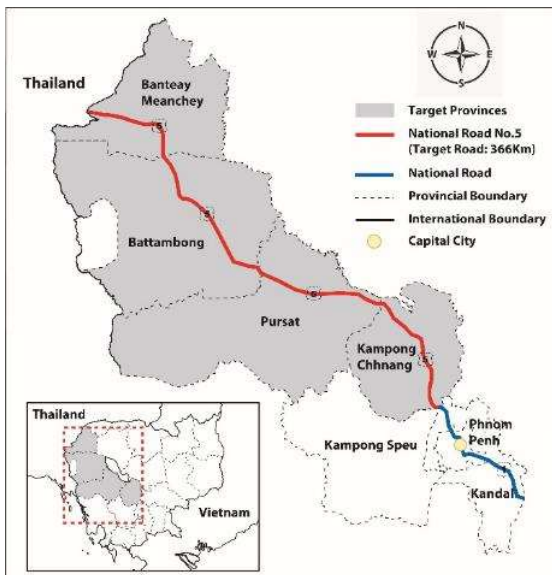
## 2. Outline of Pilot Project for RMS Development

### 2.1 Target Area

**Fig.1** shows our target area of Pilot Project, about 366km of national road No.5 (from Capital City of Phnom Penh to the border between Thailand) belongs to four Provinces (Kampong Chhnang, Pursat, Battambang and Banteay Meanchey). There are urban, rural, residential, commercial, agricultural area along the road. Some structures are constructed inside ROW or extend roofs after construction, reaching inside ROW. Also, some of those

\* Ministry of Public Works and Transport of Cambodia, \*\* CTI Engineering International Co., Ltd., \*\*\* Environment and Social Infrastructure Consultant Co., Ltd., \*\*\*\* QSC Consultant Co., Ltd.

living along the road landfill soil and bricks over open drainage canals to connect their houses and the road, causing the road to get flooded. The condition is just like the general national roads. However, it is considered that the road indicates higher development potential than other roads due to part of Asian Highway Network and the Southern Economic Corridor, requiring ROW management prior to them.



**Fig.1 Target Area of Pilot Project**



**Pic.1 Built-up Area along National Road No.5**



**Pic.2 Rural Area along National Road No.5**

## 2.2 ROW in Cambodia

"ROW" is multi-meaning word in different situation, such as traffic rules, land access, and so on. In Cambodia, ROW means state land along the road with fixed distances from the centerline of existing roads for the future development. Legal Bases, Ministerial Orders (Prakas in Khmer) in 1999 and Sub-Decree (Anu-Kret in Khmer) in 2009, define the distances based on road level as summarized in the **Table 1** below.

**Table 1 Definitions of Right of Way based on Legal Bases**

Road level	ROW Dimensions	
	Ministerial Orders No. 06, 1999	Sub-Decree No. 197, 2009
National roads (NR1, 4 and 5)	30 m length from the centerline	30 m length from the centerline
National roads (others of 1-digit number)	25 m length from the centerline	
National roads (2-digits number)	25 m length from the centerline	25 m length from the centerline
Provincial roads	25 m length from the centerline	Not specified
Commune Roads	15m	Not specified

## 2.3 Institutional Arrangement

Roads Infrastructure Department (RID) in MPWT manage the road and ROW by creating the relevant legal regulations under duties and responsibilities stated in Sub-Degree No 14, 1998. On the other hand, Department of Public Works and Transport (DPWT) of each province, which is a sub-national specialized unit under MPWT, follows all policies and legal documents prepared by MPWT, especially RID in case of ROW, within the domain of the department.

Government of Japan has focused on socio-economic infrastructure development in Cambodia as a prioritized sector for Official Development Assistance (ODA) in early 1990s. Then, JICA pays much attention to which the recipient country appropriately manage ROW, acquire land and offer resettlement programs for smooth

\* Ministry of Public Works and Transport of Cambodia, \*\* CTI Engineering International Co., Ltd., \*\*\* Environment and Social Infrastructure Consultant Co., Ltd., \*\*\*\* QSC Consultant Co., Ltd.

and beneficial infrastructure projects. Thus, the proper management of ROW plays necessary rolls for not only MPWT, the road development/management authority but also JICA.

### 3. Methodology

#### 3.1 UAV aerial imagery

There are propeller-typed(propeller) or fixed-wing-typed(fixed-wing) UAV which are characterized each from the perspective of operability, economy and efficiency. It is considered that the former has easier handling and more moderate product price, but its flight length per one flight is restricted. In contrast, the latter can fly over a longer distance, although operation process is a little complicated, requiring more time to acquire enough to operate safely, and the product cost is more expensive. In the target area shown in 2.1, propeller is mainly applied to take aerial images.

**Table 2 Specification of UAV**

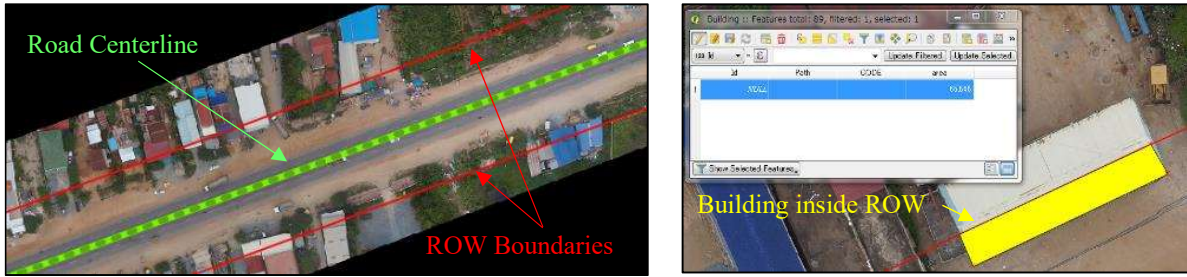
Item	propeller-typed UAV	fixed-wing-typed UAV
Product	Approx. \$2,000	Approx. \$18,000
Weight	1800g	800g
Height	50 – 150m (Auto-image capturing)	75 – 1,000m
Endurance	15min (Auto-image capturing)	50min
Flight Speed	20km/h (Auto-image capturing)	80km/h
Camera	20MP, 4.38cm GSD (100m height)	16.1MP, 3.5cm GSD (100m height)
Takeoff and Landing	Space with 3m*3m	Space with 10m*10m
Flight Length	Approx. 500 - 1,000m	Approx. 7~10km

Flight planning has three steps basically. First, flight blocks (polygon data) with 500 meters length and 100 meters width is created and arranged at equal intervals on QGIS in office. With this creation, UAV operators can draw flight path accurately and with less human error on UAV flight application at the site. Second, Flight height is set at 100 meters in which aerial imagery covers ROW completely and ground sample distance (GSD) maintains a certain level capable of identifying visually road centerlines and structure, drawing obviously them. Since Cambodia’s topography has small elevation differences, it is considered that flight height may remain 100 meters even on most state and local roads that exist outside the target area. Third, Ground Control Points (GCPs) are marked on the ground and recorded for their geographic location with a handy GPS device before taking aerial photos.

#### 3.2 Image Processing and Data Production

Ortho-images (Ortho), which are raster datum and used as a framework data, are created by merging aerial images with Pix4D mapper, the photogrammetry software for drone mapping. The output must be Cambodia’s coordination system, World Geodetic System 1984 / UTM Zone 48N (egm96). With this creation, vector datum can be drawn and produced on Ortho to express existing features such as road centerlines as well as non-existing features such as ROW boundaries as shown the Fig.2. ROW boundaries should exist along the lines with fixed distances from the centerline of existing roads, so the drawn centerline on QGIS is used as input features to create buffer polygons, the ROW boundaries. Then, buildings and other necessary features within ROW are drawn and saved as shp files with attribute information as a point, line or polygon data.

\* Ministry of Public Works and Transport of Cambodia, \*\* CTI Engineering International Co., Ltd., \*\*\* Environment and Social Infrastructure Consultant Co., Ltd., \*\*\*\* QSC Consultant Co., Ltd.



**Fig.2 Data Production on Ortho of Road centerlines, ROW Boundaries and buildings inside ROW**

### 3.3 Database, Field Survey and Data Finalization

Server and the Web GIS system are constructed to realize referencing and inputting information in field with the following procedures. First shp files created by QGIS are converted to database format for PostgreSQL/PostGIS. Second, ground photos taken at field survey following data production are developed as database, making a link with each shp file. Third, base map for the bottom layer at browser application is set up by the database such Ortho and existing survey maps. Then field surveyors can store shp files and base map for the modification from database server to the tablet for the survey. In this connection, it should be noted that limited function database for field surveyors is split from full function database as administrative function.

Field surveyors can modify/update property information such as to input text by typing and selecting, take images by tablet camera and make link with the point and then update modified shp files from tablet to database server through internet connection after the survey. The history of modified shp files in the database server is recorded, so it is possible that the administrator checks it finally. What database items should be stored for efficient and effective ROW management, are currently under consideration. These items should be considered and determined for how IEP should be implemented. One example of it is building/built-up Area, mobile shop, land filling over open drainage canals, open/bush area and wet land/rice field.

### 3.4 IEP

CSI provides not only baseline data of ROW management, but also shows results of thematic analysis, such as potential of future illegal encroachment along a road with indicators of population density. Because urbanized area shall be managed by actual border between road and structures based on land registration, the targets of IEP, the second step of ROW Management, are peri-urban and rural areas where new encroachment may occur in the future. According to the conditions of road side environment, suitable and effective soft and hard measures for IEP are recommended by RMS. Typical measures are shown in **Fig.3**.

#### ❖ Soft Measures (Dissemination, Patrol, PR, etc.)



*Periodical patrol by provincial government officer by using RMS*



*Explanation sign board for ROW definition and regulation*



*Public dissemination and public relation for residents along the road*

#### ❖ Hard Measures (Fence, Pole, Service Road, etc.)



*ROW pole for boundary demarcation*



*Fencing for preventing encroachment*



*Construction from outside of ROW with service road as the border of ROW*

**Fig.3 Typical Measures for IEP**

\* Ministry of Public Works and Transport of Cambodia, \*\* CTI Engineering International Co., Ltd., \*\*\* Environment and Social Infrastructure Consultant Co., Ltd., \*\*\*\* QSC Consultant Co., Ltd.



#### **4. Conclusion**

This paper presented concrete methodology to identify current status for ROW management: (1) UAV Aerial Imagery (2) Image Processing (3) Data Production (4) Database (5) Field Survey (6) Data Finalization. These processes are based on technique of UAV mapping and GIS database, which is different from the conventional method with cadastral datum and land registration, which requires accurate surveying and takes more time to be registered legally. It is considered that as illegal encroachment cause bottleneck of road improvement projects in Cambodia, the situation in which the problem is solved in rapid manner would increase. This pioneering initiative is expected to produce a derivative effect and lead to further horizontal development for other countries with the same difficulty.

\* Ministry of Public Works and Transport of Cambodia, \*\* CTI Engineering International Co., Ltd., \*\*\* Environment and Social Infrastructure Consultant Co., Ltd., \*\*\*\* QSC Consultant Co., Ltd.




THE PROJECT FOR CAPACITY ENHANCEMENT  
 ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS  
 IN IMPLEMENTING AGENCY IN ROAD SECTOR  
 IN THE KINGDOM OF CAMBODIA (CESCOR)

## RIGHT OF WAY MANAGEMENT SYSTEM (RMS) IN CAMBODIA



Mr. Samnang CHEA\*

Mr. Vaddhanak NOU\*

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Mr. Takahiro KUMAGAI\*\*\*\*

\* Ministry of Public Works and Transport of Cambodia (MPWT)  
 \*\* CTI Engineering International Co. Ltd.  
 \*\*\* Environment and Social Infrastructure Consultant Co., Ltd.  
 \*\*\*\* QSC Consultant Co., Ltd.

## Contents of the Presentation

1. Introduction
2. Outline of Pilot Project for RMS Development
  - 2.1 Target Area
  - 2.2 ROW in Cambodia
  - 2.3 Institutional Arrangement
3. Methodology
  - 3.1 UAV Aerial Imagery
  - 3.2 Image Processing and Data Production
  - 3.3 Database, Field Survey and Data Finalization
  - 3.4 Illegal Encroachment Prevention (IEP)
4. Conclusion

2

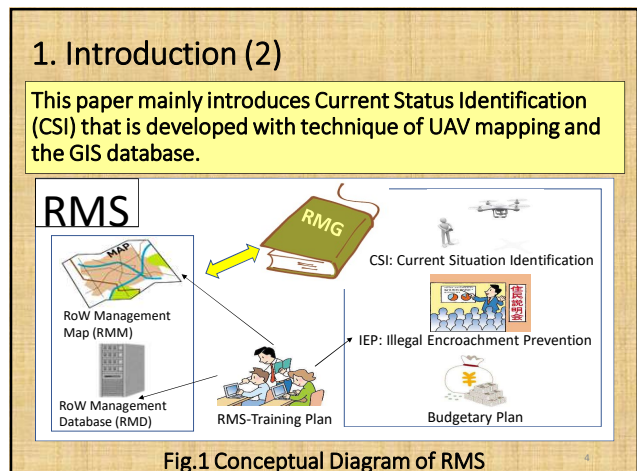
### 1. Introduction (1)

As a road management authority, MPWT has tried to keep ROW lines for the future widening project. However, illegal encroachment (*one of the major tackling issues of road improvement projects*) within Right of Way (ROW) is still commonly observed due to lack of ROW management system.

↓

MPWT launched the specific project to establish integrated ROW Management System (RMS) with assistance from JICA.

3



## 2. Outline of Pilot Project for RMS Development

### 2.1 Target Area

**Fig.2 Target Area of Pilot Project**

**Pic.1 Built-up Area**

**Pic.2 Rural Area**

## 2. Outline of Pilot Project for RMS Development

### 2.2 ROW in Cambodia

Cambodia ROW means state land along the road with fixed distances from the centerline of existing roads for the future development.

**Table 1 Definitions of ROW based on Legal Bases**

Road level		ROW Dimensions	
		Ministerial Orders(※1)	Sub-Decree (※2)
1-digit Number National Roads	NR1, 4 and 5	30 m(※3)	30 m(※3)
	Others	25 m(※3)	30 m(※3)
2-digits Number National Roads		25 m(※3)	25 m(※3)
Provincial roads		25 m(※3)	Not specified
Commune Roads		15m(※3)	Not specified

※1 Ministerial Orders No. 06, 1999,  
 ※2 Sub-Decree No.197, 2009 ※3 length from the centerline

## 2. Outline of Pilot Project for RMS Development

### 2.3 Institutional Arrangement

Roads Infrastructure Department (RID) in MPWT manages the road and ROW by creating the relevant legal regulations under duties and responsibilities stated in Sub-Decree No 14, 1998.

Provincial Department of Public Works and Transport (DPWT), a sub-national specialized unit under MPWT, follows all policies and legal documents prepared by MPWT, especially RID in case of ROW, within the domain of the department.

## 3. Methodology

**Fig.3 Overall Process**

### 3. Methodology

#### 3.1 UAV Aerial Imagery(1)

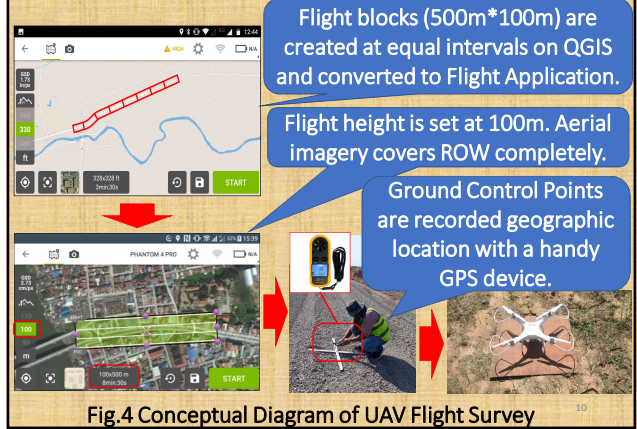
- Propeller is mainly applied to take aerial images based on review of Propeller and Fixed-wing UAV with the perspective of operability, economy and efficiency.

Table 2 Specification of UAV

Item	Propeller	Fixed-wing
Product	Approx. \$2,000	Approx. \$18,000
Weight	1800g	800g
Height	50~150m (※1)	75~1,000m
Endurance	15min (※1)	50min
Flight Speed	20km/h (※1)	80km/h
Camera(※2)	20MP, 4.38cm GSD	16.1MP, 3.5cm GSD
Takeoff / Landing	3m*3m Space	10m*10m Space
Flight Length	0.5~1.0km	7~10km

※1 With Auto-image Capturing ※2 100m Flight height

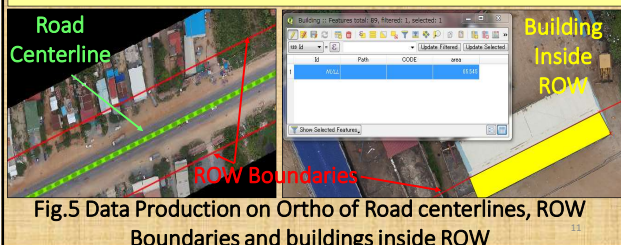
#### 3.1 UAV Aerial Imagery(2)



### 3. Methodology

#### 3.2 Image Processing and Data Production

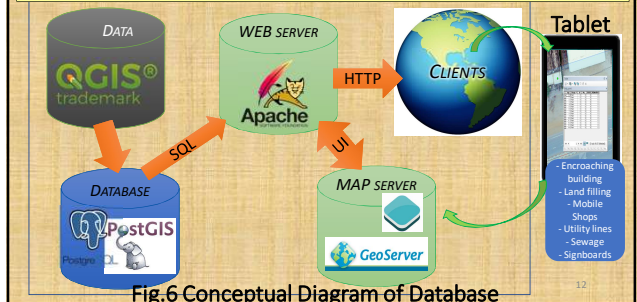
- Ortho-images(Ortho: raster datum) are created by merging images with Pix4D mapper as framework data.
- With this creation, vector datum can be drawn and produced on Ortho to express existing features such as road centerlines and non-existing features such as ROW boundaries as shown the Fig.5.



### 3. Methodology


#### 3.3 Database, Field Survey and Data Finalization

- Server and the Web GIS system are constructed to realize referencing and inputting information in field.
- Field surveyors can modify/update property information by using a tablet through internet connection after the survey.



### 3. Methodology

#### 3.4 Illegal Encroachment Prevention (IEP)



**Soft Measures**  
-Patrol  
-Dissemination  
etc.

**Hard Measures**  
-Poles  
-Fence  
-Construction  
from outside  
of ROW, etc.

**Fig.5 Typical Measures for IEP**

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### 4. Conclusion

- This paper presented concrete methodology to identify current status for ROW management: (1) UAV Aerial Imagery (2) Image Processing (3) Data Production (4) Database (5) Field Survey (6) Data Finalization.
- It is considered that as illegal encroachment cause bottleneck of road improvement projects in Cambodia, the situation in which the problem is solved in rapid manner would increase.
- This pioneering initiative is expected to produce a derivative effect and lead to further horizontal development for other countries with the same difficulty.

14

**THANK YOU FOR YOUR ATTENTION**

15



# JICA's Right of Way Management Project in Cambodia (CESCoR)

- Assisting JICA Environmental and Social Considerations (ESC) -

TSUCHIDA Takayuki<sup>(1)</sup>, TAUCH Chankosal<sup>(2)</sup>, CHHIM Phalla, PIN Vuthea, PORK Novida, YAMASHITA Akira<sup>(3)</sup>  
(1) CITI Engineering International Co., Ltd. (2) Ministry of Public Works and Transport of Cambodia (3) Environment and Social Infrastructure Consultant Co., Ltd.



## INTRODUCTION (For supporting smooth implementation of infrastructure development and maximization of project benefit)

### 1 Background

- Japanese Official Development Assistance (ODA) has been granted to the road and bridge construction projects in Cambodia since the Peace Pact, 1993
- "Resettlement" started from late 1990s in Cambodia
- Japan International Cooperation Agency (JICA) introduced its former Guidelines on Environmental and Social Considerations (2004) including involuntary resettlement
- Necessity of appropriate Right of Way (ROW) Management had been recognized with emergent resettlement issue along the road.
- JICA and Ministry of Public Works and Transport (MPWT) launched CESCoR to enhance capacity on ROW Management from January 2017 (until December 2019).

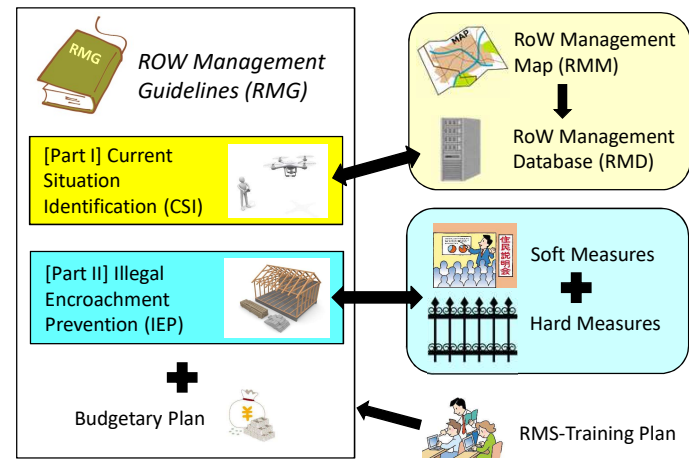


Kingdom of Cambodia

[Example] National Road No1 Improvement  
Civil Works: Widening, Re-pavement  
Distance: Approx. 50km  
Affected Household: Approx. 4,000 \*  
\* Most households were located within ROW

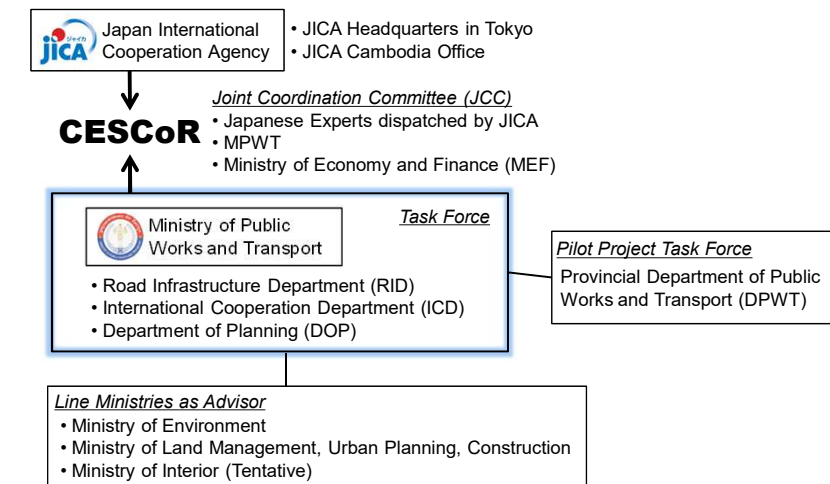


### 2 Right of Way Management System (RMS)

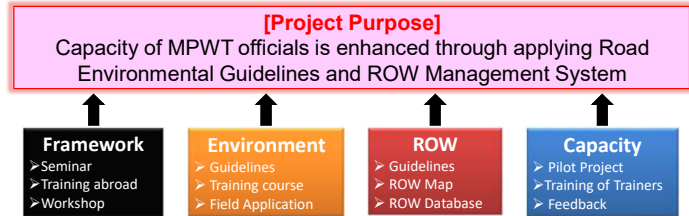


## PROJECT DESIGN (JICA's Technical Cooperation Project with Project Design Matrix (PDM))

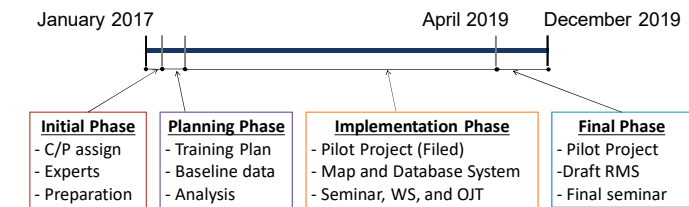
### 3 Project Implementation Structure



### 4 Project Purpose & Outputs

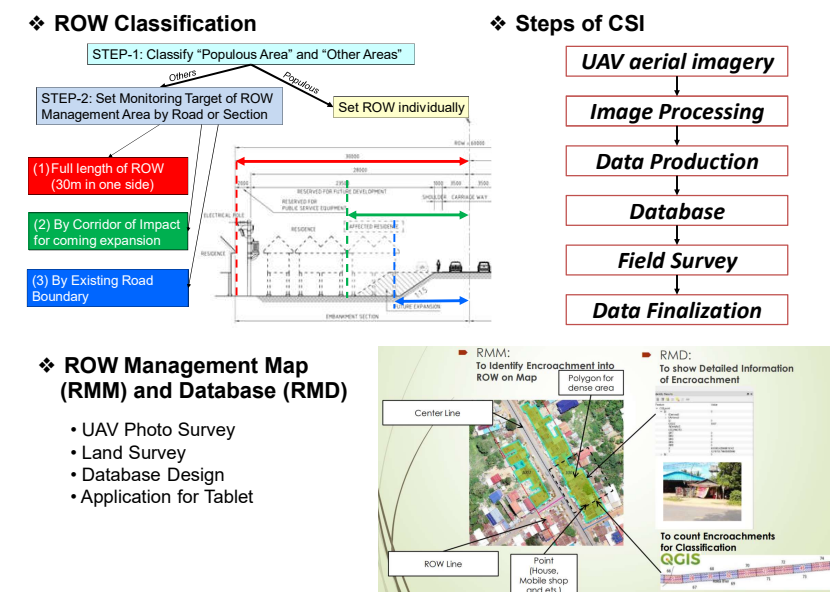


### 5 Project Schedule

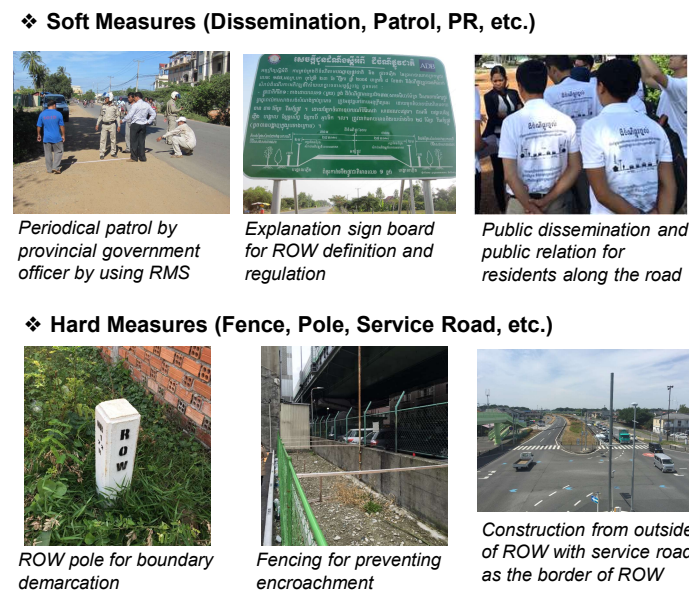


## ACTIVITIES AND OUTPUTS (Current Status Identification (CSI) and Illegal Encroachment Prevention (IEP))

### 6 Current Status Identification (CSI)



### 7 Illegal Encroachment Prevention (IEP)



## CONCLUSION / LESSON LEARNED

- Determination/Classification of scope of ROW which should be managed practically is one of the pre-condition.
- CSI as a Cut-off-date for illegal encroachment of ROW can be a good baseline data for future ROW management.
- Appropriate IEP method with both soft and hard measures are recommended to reduce future influx into ROW.
- Clear border management with land registration is expected especially in the urban and peri-urban roads.