

JICA Expert Reports

J2: EIA/EMP

- J2-1. Environmental Considerations Analysis:
 - a Needs Analysis
 - b ESC Analysis
- J2-2. REG Development Plan
- J2-3. List of EIA/EMP Taskforce Meeting Records
(REG Authorization Process)
- J2-4. REG Monitoring Report

J2-1. Environmental Considerations Analysis:
a Needs Analysis
b ESC Analysis

J2-1. Environmental Considerations Analysis (a Needs Analysis)

PDM Means of Verification 1.4.1 JICA Expert Report (Needs Analysis)

This Report is based on the needs for EIA/EMP from the counter parts of this projects, which were expressed in the following occasions, as well as an rapid analyses for the needs by JICA Expert.

- ◆ Project Kick-off Meeting on 17th March at Meeting Hall, MPWT
- ◆ Needs Assessment related to EIA/EMP to each member of EIA/EMP of TF on 24 March

1. Needs (Expectations) for EIA/EMP Activities of the Project

1.1 Expectations in the Project Kick-off Meeting on 17th March at Meeting Hall, MPWT

It was expressed the following expectations for capacity development and enhancement for the Environmental and Social Office (ESO) of Department of Planning (DOP), MPWT such as;

- (1) Development of EIA/IEE report relative to road construction and maintenance sector, especially key elements in EIA/IEE report.
- (2) Preparing of Environmental and Social Screening Checklist and how to identify the issue relative to environment and social aspect
- (3) Preparing of Comprehensive EMP for road construction and maintenance
- (4) Key tools and/or methods for EIA/IEE associated to road work sector and physical environmental assessment.
- (5) Management skill of EIA/IEE work flow and procedure for EIA/IEE approval
- (6) Review on EIA/IEE report for improvement implementation and quality assurance of environmental quality
- (7) Perform an acceptable monitoring and inspecting the implementation of EMP
- (8) Prepare a highly quality report of monitoring and inspecting to be reported to MPWT management level
- (9) Design and prepare an acceptable and good report template for monitoring and inspecting of EMP implementation

Also, it was expressed the following expectations for capacity development and enhancement for the Project Management Unit (PMU), including actual EIA/EMP related tasks in International Cooperation Department, MPWT such as;

- (1) Providing comprehensive training on the Basic Environmental Procedure.
- (2) Developing the checklist or template of Resettlement Action Plan (RAP) preparation and RAP updated.
- (3) Preparing the proposal for EIA
- (4) Receiving more knowledge & experience in EIA & ROW implementation
- (5) Providing Capacity Building to provincial working group on RAP.

1.2 Needs Assessment related to EIA/EMP to each member of EIA/EMP of TF

It was conducted a rapid questionnaire survey for each main EIA/EMP Team member as needs assessment on 24 March. The main comments are as follows:

- (1) I hope the training will provide the important knowledge to implement on the field in the future.
- (2) I hope training will allow me to get the insight of this EIA, ROW and EMP, the application of EIA, ROW, and EMP in Japanese context. Last but not least, I hope I can apply this knowledge into my daily work.
- (3) I hope I can practice in real situation during seminar or workshop for EIA/EMP.
- (4) I hope the training will also provide the good practice of using air pollution, noise and vibration measurement equipment that in the future our team will be able to use those equipment for monitoring and inspection at the project site.
- (5) The training will provide key concepts and knowledge of EIA and EMP associated with road transportation project, and deliver the good practice of this associated assignment for our officials.
- (6) The training program should also cover knowledge of report preparation of monitoring and inspecting of EMP implementation as well as cover the main elements of the effective review of EIA/IEE report.

2. Rapid analyses for the needs by JICA Expert

For the above needs (expectations) from the relevant officials, it is address the following present situations and their capacity development training directions in terms of EIA/EMP collaboration activities among the EIA/EMP Team of TF of the Project and the JICA Expert, who is in charge of EIA/EMP.

2.1 Present Situations of the MPWT officials for EIA/EMP

(1) Reposes for the Needs (Expectations)

JICA Expert addressed the following main responses for the above needs:

- ◆ There are many expectations in particular technical knowledge for EIA/EMP for the project. It is admired for the needs from the C/P
- ◆ However, the range of the needs are very broad, some of the needs such as the above needs from PMU for item (2) and (4) are obviously out of this Project scope. This project does not deal with resettlement issues and RAP;
- ◆ In terms of preparation of EIA, it will be necessary to understand practical technical knowledge, including practical skills for sampling, impact forecast, etc.. It will be insufficient the time to learn, and the these practical knowledge in not necessary for the MPWT officials.

(2) Technical knowledges in terms of EIA/EMP

It was conducted a capacity assessment (CA) in terms of EIA/EMP activities, which includes basic four elements i) understandings of Environmental and Social Considerations Guidelines (JICA/WB), ii) understandings of EIA technical contents, iii) understandings of EMP technical contents, and iv) understandings of EIA Procedures in Cambodia, for each EIA/EMP Team of TF on 31 March.

Based on the CA results, most of the members are necessary to learn from basic knowledge/skill for all the above elements of the EIA/EMP.

On the other hand, this project for MPWT officials, who could only involve in parts of EIA process in Cambodia , due to tasks and authorities for EIA/EMP by the MOE.

(2) Capacity Development Training Basic Directions

JICA expert suggested that the following basic directions for capacity development for EIA/EMP will be effective and fruitful for the MPWT related officials:

The selected EIA/EMP Team member of TF of MPWT will conduct the following collaborative works between EIA/EMP Team member and the JICA Expert through weekly technical meetings, including rapid project site check:

- ◆ Technical Discussion Meeting for understandings of the main concepts of Environmental and Social Considerations Guidelines by JICA ,WB and the other donors;
- ◆ Formulation of the Road Environmental Guidelines (REG) for MPWT officials

The REG will be concise and practical EIA and EMP Process document with essential technical knowledge/methods for reviewing EIA/EMP in road sector in Cambodia.

PDM Means of Verification 1.1.1 JICA Expert Report (ESC Analyses)

This Report is described in terms of EIA and EMP Process, but not including resettlement issues, based on relevant documents and information collections in Cambodia.

1. World Bank EIA Process and Environmental Management Plan

1.1 World Bank EIA General Process

The standard social and environmental impact assessment process by World Bank (WB) is illustrated in Figure 1.1.

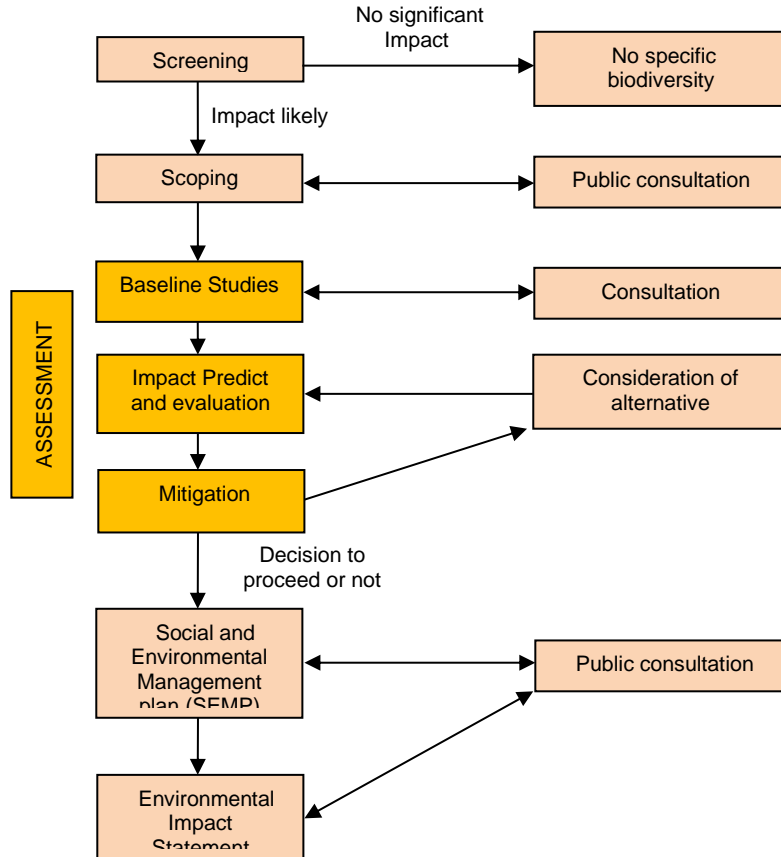


Figure 1.1 World Bank EIA General Process

1.2 WB’s Social and Environmental Management Plan

Social and Environmental Management Plan (SEMP), it is used for World Bank Project as general Environmental Management Plan (EMP), defines resources, roles and responsibilities required to manage biodiversity impacts and implement mitigation measures.

The central elements of a SEMP should include a prioritized description of the activities planned to mitigate impacts, a time line and identification of resources to ensure the SEMP can be delivered, and a communication plan that indicates how progress in the implementation of the SEMP will be disclosed.

The SEMP should also define monitoring requirements to determine whether mitigation is successful. Although monitoring is often overlooked since it occurs once the project has been approved and is underway, it is important for providing evidence that the company (project owner) is achieving compliance and allowing for any necessary remedial measures to be put in place.

According to Environmental Management Plans and Environmental Assessment Sourcebook Update, 1999, World Bank, EMPs should include the following main contents:

- Summary of Impacts
- Description of mitigation measures:
- Description of monitoring program
- Institutional arrangements
- Legal enforceability
- Implementation schedule and reporting procedures
- Cost estimates

2. ADB EIA and EMP Process

2.1 ADB’s environmental assessment process

ADB’s Environment Policy requires that environmental considerations be incorporated into ADB operations. Environmental assessment is the primary administrative tool to integrate environmental considerations into decision-making of all types of development initiatives such as formulating policies, programs, and development plans.

Environment is considered at all stages of the ADB’s business processes from country strategy and program development through Project Preparation Technical Assistance and Loan (PPTA/Loan) processing to completion and post evaluation (see Figure 2.1).

ADB requires the use of Country Environmental Analysis (CEA) to integrate environmental concerns at the programming level. In PPTA/Loan Preparation, all loans are subject to environmental categorization, impact assessment, safeguard compliance, and preparation of loan covenants. During loan implementation and supervision, ADB review missions are undertaken to review the progress on implementation of the mitigation and monitoring requirements outlined the environmental management plan. During project completion and project evaluation, reports are prepared to document the actual environmental impacts, the degree of implementation of the environmental management plan, and to evaluate the overall effectiveness of the EMP in reducing and preventing adverse environmental impacts.

Business Process	Key Stage	Environmental Assessment Requirements
Country Strategy and Program	CSP	Country Environmental Analysis
PPTA/Loan Processing	Project Identification	Environmental Categorization Rapid Environmental Assessment
	Pre Design	
	Project Design	Environmental Assessment
	Loan Processing	Safeguard Compliance
Loan Implementation and Supervision	Loan Inception	Review of Environmental Management Plan Implementation
	Mid-term Loan Review	
Project Completion and Evaluation	Project Completion Report	Review of Actual Impacts and Environmental Management Plan Effectiveness
	Post Evaluation Report	

Note: CSP means Country Strategy and Program

Figure 2.1 Environmental Requirements in ADB’s Business Processes

2.2 ADB’s EMP

An important objective of environmental assessment is to develop procedures and plans to ensure that the mitigation measures and monitoring requirements approved during the environmental compliance review will actually be carried out in subsequent stages of the project. As a result, ADB places strong emphasis on the preparation of EMPs during project processing and on setting out conditions and targets to be met during project implementation. The Terms of Reference (TOR) for an EIA thus require the Borrower or their consultants to prepare an EMP as a major output of the environmental assessment. Where appropriate, the key contents of EMPs are incorporated into the loan agreement, for implementation and monitoring by the Borrower.

ADB requires that an EMP be included as part of the EIAs and Initial Environmental Examinations (IEE)s. EMPs should include almost same main contents, which is described in the above section 1.2.

3. EIA and IEIA Process in Cambodia

The contents of EIA and Initial Environmental Impact Assessment (IEIA) general process in Cambodia is the same as the World Bank EIA General Process, which is illustrated in Figure 1.1. This report for EIA process in Cambodia is focused on reviewing parts of EIA Report and EMP.

3.1 EIA/IEIA review process

In reviewing and providing comment on IEIA or EIA Report shall be 30 working day counting from the date of official receipt of the Report. The meeting procedure consists of four stages for the Ministry and three stages for Provincial level.

Five stages for reviewing EIA/IEIA procedure for Ministry level as below:

Table 3.1 Ministry of Environment's Reviewing Stage

Stages	Ministry or Department	Review period (working day)
1	Professional officers of Department of EIA do field evaluation at the project site	10
2	Inter-concerned department (MoE)	5
3	Senior official of MoE	5
4	Inter-ministerial (NGOs, Stakeholders)	5
5	Approval of EIA by MOE	5

Three stages for reviewing EIA/IEIA process for Provincial Level as below:

Table 3.2 Department of Environment of Provincial/municipality

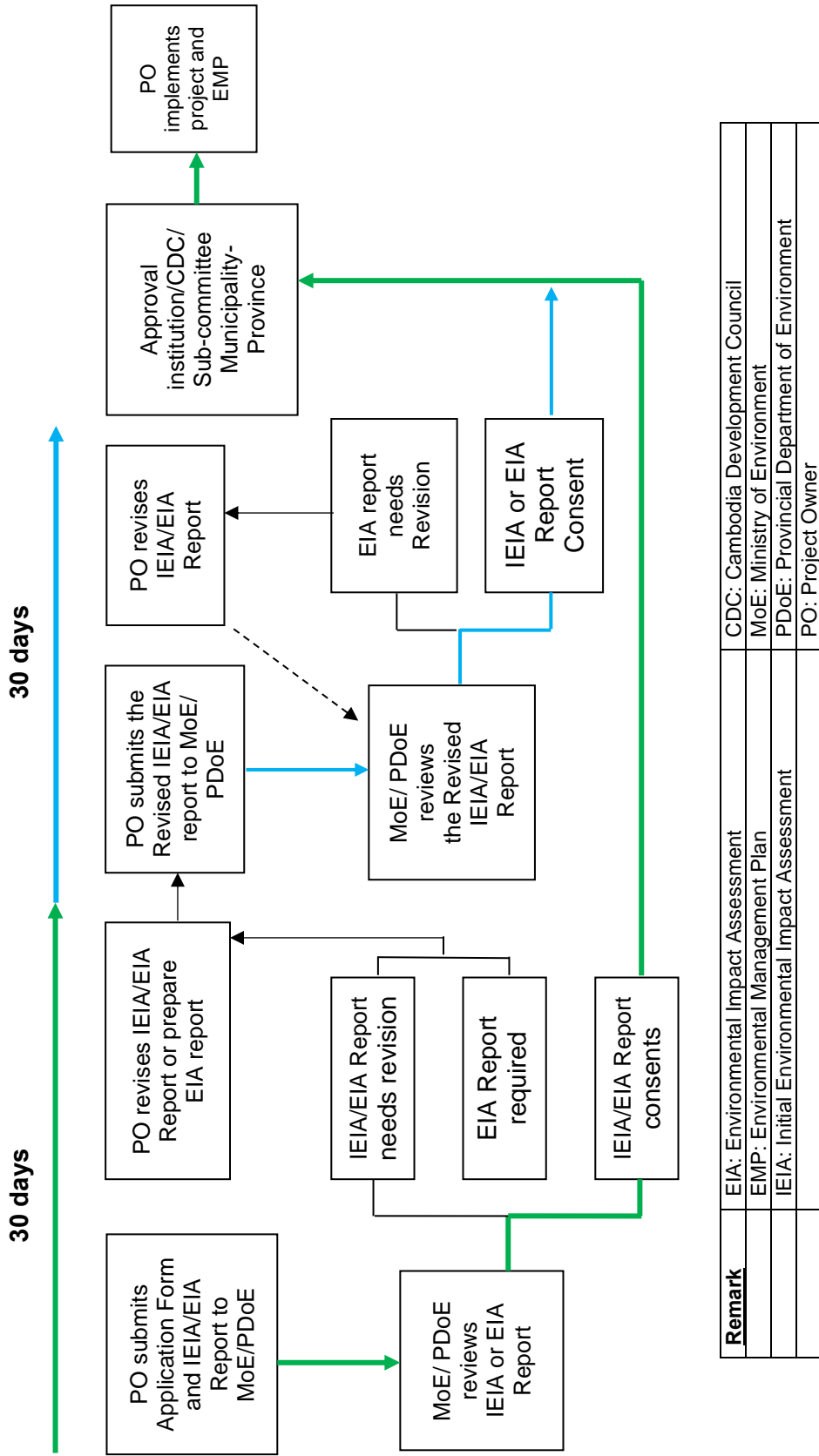
Stages	Ministry or Department	Monitoring and Review period (working day)
1	Provincial Department of Environment	15
2	Senior official of the Municipal-Provincial	5
3	Inter-Department of the Municipal and Province	5
4	PDoE (approved or revised)	5

For both stages on reviewing process in the case of Ministry of Environment or Municipal/provincial department of Environment provide comment to the project's owner to revision. Then, the Ministry of Environment or Municipal/provincial department of Environment makes revision within 30 days of working day after date of official receipt of the revised report (see detail Figure 3.1).

3.2 EMP in Cambodia

In this part, the project owner should have environmental fund and preparing a groups of staffs who have specialize, tools, methods and judgment on environmental issues by cooperation with Ministry-department and related institutes to mitigate negative impact from the project on environmental, socio-economic. The EMP in Cambodia should include the following main contents, according to the MOE in Cambodia.

- Summary of main negative environmental impacts and mitigation measures
- Training to be provided
- Monitoring schedule during project construction, operation and closure phases that project owner shall clarify as below:
 - Monitoring institutes
 - Parameters to be monitor
 - Monitoring method
 - Environmental standards or any guidelines shall apply in monitoring stage
 - Schedule and cycle of monitoring and mitigation measures
 - Assessing the possibility of supervision by the project owner
 - Preparation of quarterly reports to be sent to the Ministry of Environment and the Ministry/Related Ministry.



Source: Prakas (Declaration) on Guideline for Conducting Environmental Impact Assessment Report (English translated version), 2000, MOE
 Note: The above figure is slightly revised from the above source for more easy to understand.

Figure 3.1 EIA Process for Proposed Project Approved by Project Owner as Ministry and Institution in Cambodia

4. Main Implementation Issues related to EIA and EMP

It could be addressed that present EIA process and EMP in Cambodia by donor's assistance projects have the following main implementation issues, based on this rapid findings:

4.1 ADB, World Bank, or JICA funding Project

(1) Environmental Monitoring Report should send to the MOE for the donors such as ADB or World Bank

The MOE will follow the EMP of EIA/IEIA after approval from inter-ministry meeting so all the projects should be submitted the EMP to the MOE for monitoring the EMP. The EMP will prepare by project owner for example, road construction project is owned by MPWT so the report is submitted by MPWT.

On the other hand, during the construction period the Contractor has its own environmental expert and responsible on environmental monitoring and preparing the Environmental Monitoring Report to the project owner (MPWT). The project owner also has its own environmental expert and responsible to monitor the field work and report to the MOE. After submission the Environmental Monitoring Report, the MOE will go to the project field to check and provide comments on the Environmental Monitoring Report from project owner (MPWT) before improving the monitoring report.

There are many players to prepare and review the Environmental Monitoring Report. For example, if the project owner doesn't submit the Environmental Monitoring Report to the MOE on time, the project owner will get complaint from the MOE.

(2) Submission of EIA/IEE Report in Khmer version for MOE (officials in Cambodia) and English version as referent for donors only.

The official language in Cambodia is Khmer so the English report is needed to be translated into Khmer Report and submit to the MOE. Because many officials need more time to understand the English report. On the other hand, the submission of Khmer report will take time for approval. There are the following past project examples:

- a. An EIA report need more than one year (study duration is one year) for final approval from the MOE.
- b. An IEIA report for final approval from the MOE is still need about one year

(3) The majority of civil works contractors actually did not implement the mitigation measures

The EIA/IEIA includes the environmental impacts arising from the project during construction and operation. The civil works contract documents included environmental impact mitigation measures that contractors have to implement during construction. The majority of civil works contractors did not implement these mitigation measures fully, although some improvements were observed by recommendations of local consultants from project owner, ADB reviewer, as well other donor.

4.2 Chinese and Korean fund Project

At first, China and Korea has no own EIA/EMP guidelines for official development assistant projects. Therefore, EIA process of any development projects in Cambodia funded by China or Korea is necessary to follow the EIA process by MOE in Cambodia, which is illustrated in Figure 3.1. However, it is not clear that Chinese or Korean funded projects actually follow EIA process by MOE in Cambodia, as well as the World Bank EIA general process, which is illustrated in Figure 1.1.

Also, it is reported that Chinese or Korean funded project have the following implementation issues in terms of EIA/EMP process, based on relevant documents and information collections in Cambodia.

(1) Not realistic comments for the sampling numbers or methods

The MOE will review a TOR for EIA, which is described such as (i) sampling numbers of the study location; (ii) air quality method and sampling area; (iii) water quality method and sampling area; (iv) parameters of water quality and air quality; (v) samples sizes for social survey (vi) number of related department, NGOs and local

authorities for public consultation. However, the following unrealistic comments by the MOE will provide to the local consulting firms:

Example: "Road Construction Number 5 Project funded by Korean"

- In general we take three places for sampling but during meeting with DEIA of MoE, the DEIA comment on number of water sampling area as we should take in every main bridge due to there are many bridges along this road.
- For air quality DEIA comment that we should take where there is a plenty of resident as district center and market area which locate along the street
- For sample size of social survey we should take at least 10 % of total household and villages along road.

After approving TOR, MOE will issue the letter for field work for consulting firm.

(2) Approval on EIA/IEIA Report will take a long time

The Inter-ministry meeting and defend will comment on monitoring schedule, monitoring budget, and other main issue as well monitoring report from project owner/contractor should be submit on time.

- Monitoring schedule: In each phase of implementation should have clear schedule as every six for water quality sampling, two times of Air quality etc..
- Monitoring budge: the budget should follow the Ministry of Economic Finance (MEF)
- Monitoring report: the report should send to MOE every six month

J2-2. REG Development Plan

Revised on July 19, 2017

PDM Means of Verification 2.4.1 Road Environmental Guidelines (REG) Development Plan

1. Backgrounds of the development of REG

1.1 Implementation issues of MPWT for EIA/EMP process in Public Infrastructure Projects

MPWT staff, who are assigned for EIA/EMP involvement in Public Infrastructure Projects have authorized and actual duties for the involvement.

However, there are some implementation issues such as insufficient technical knowledge/skills for reviewing EIA/EMP through effective and integrated involvement by MPWT under cooperation with Ministry of Environment in Cambodia.

1.2 JICA CESoR Project

JICA CESoR Project has output 2 “Capacity of MPWT officials on Environmental Considerations (EC) is enhanced through applying REG” The purpose of the Outputs 2 is to enhance capacities of the selected Task Force (TF) members of MPWT of this Project for EC (EIA and EMP) in Road Sector in Cambodia through collaborative activities of the selected TF members by assistances of the JICA Expert..

1.3 Purpose of Development of REG

For improving the above implementation issues of MPWT, a REG for MPWT staff will be developed through the following activities:

2. Planned Collaborative Activities and Overall Schedule

2.1 Understandings of Main Concepts on Environmental Social Considerations (ESC) by DPs (WB, ADB, and JICA)

The selected TF members could understand through an EIA/EMP related Technical Meeting on 6th April

2.2 Understandings of Implementation Issues of MPWT to involve EIA/EMP in Road Sector

(1) Weekly EIA/EMP related Technical Meeting on 20th April

(2) Presentation by a MPWT staff on 1st Technical Seminar on 4th May:

Presentation topic: Tasks (Duties) and the Implementation Issues of MPWT for EIA Road Sector

2.3 Confirmations of documentation level/authorizing, supporting for authorization of the REG

(1) Confirmations of documentation level and the authorizing process of the REG during April to July

(2) Supporting for authorizing by MPWT of the REG: during January to February, 2018

2.4 Concrete trainings and discussions for development of the REG

The selected TF members could develop the REG through the EIA/EMP related Technical Meetings from the end of April to the end of December 2017 through assistances by the JICA Expert.

2.5 Training in Japan and Third countries

The following are scheduled so that some of the selected TF members could get other EIA/EMP know-how.

(1) Training in Japan for the middle of June

ESC cases in Japan and East Asian Countries in Japan

(2) Training in Third countries (Myanmar) from 24th to 28th October, 2017

EIA Technical Assistance cases in Myanmar, Thailand’s case

2.6 Presentation to disclose the draft REG on 2nd Technical Seminar

Planned Development Schedule of the REG

Activities	Year 2017									Year 2018		
	April	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 countries (Myanmar, Thailand)			●—				●—					
2.6 Presentation to disclose the Draft REG on 2 nd Technical Seminar										▲		

Note: Actual stays in Cambodia of the JICA Expert until the end of March 2018 are i) from the end of March to the end of April, ii) the begging of July to the begging of August, iii) the [middle of November to the end of December](#), 2017, and iv) the middle of January to the end of February 2018.

3. **Drat** Table of Contents (TOC) of the REG

The JICA Expert is considering the followings are draft Table of Contents (TOC) of the REG, which REG will be a practical guidelines and easy to understand with necessary technical knowledge/skills as the appendices, and easy to applying to actual public transportation projects in Cambodia.

Main Parts

1. Backgrounds

1.1 Objectives, Users and Scope of the Guidelines

1.2 Road Development Project Cycle and the EIA/EMP

2. Essential Related Laws/Guidelines of EIA/EMP for Road Sector in Cambodia

3. Present EIA Process/Steps and Involvement Phases by MPWT in Cambodia

4. Practical Involvement Methods by MPWT for EIA Process of Road Sector in Cambodia

4.1 EIA Report Review Phase (Inter-Ministerial Meeting, etc.)

4.2 Project Monitoring Phase

(1) Reviewing (Verifying) Environmental Management Plan (EMP)

(2) Reviewing (Verifying) Environmental Monitoring Plan (EMoP)

(3) Reviewing (Verifying) Environmental Monitoring Report (EMoR)

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 Report/Reviewing

References

Reference 1: A Sample of Environmental Management Plan (EMP) in Road Sector

Reference 2: A Sample of Environmental Monitoring Plan (EMoP) in Road Sector

Reference 3: A Sample of Environmental Monitoring Report (EMoR) in Road Sector

Reference 4: A Sample of Environmental Monitoring Form in Road Sector

Reference 5: Essence of Environmental Sampling (Air, Water, Noise) Methods

Reference 6: Essence of Environmental Impacts Evaluation Methods in Road Sector

The above TOC of the REG will be revised through the discussions with the selected TF members.

**J2-3. List of EIA/EMP Taskforce Meeting Records
(REG Authorization Process)**

J2-3. List of EIA/EMP Taskforce Meeting Records (REG Authorization Process)

List of EIA/EMP- TF Meetings Records

EIA TF Meetings	Objectives	Results
1 st EIA-TF Meeting Date: 31/03/2017	<ul style="list-style-type: none"> • To conduct a short quiz to understanding their technical knowledge related to EIA and EMP • To discuss on Regular Technical Meeting Schedule by the end of April 	<ul style="list-style-type: none"> • Result of the evaluation will be disclosed later • EIA taskforce meeting will be organized in all most every week till the end of April
2 nd EIA-TF Meeting Date: 06/04/2017	<ul style="list-style-type: none"> • To present JICA Environmental and Social Consideration Guideline • And Questions and Answer 	<ul style="list-style-type: none"> • Taskforce member are aware of • JICA Environmental and Social Consideration Guideline • And common items of JICA ESC guidelines and World Bank Safeguard Policy.
3 rd EIA-TF Meeting Date: 20/04/2017	<ul style="list-style-type: none"> • To present and discuss on draft tasks and implementation issues of MPWT for EIA road sector in Cambodia 	<ul style="list-style-type: none"> • EIA-TF members clarify the roles and responsibilities of Environmental and Social Officer of DoP in relation with EIA • Mr. Vireak has been assigned to present the implementation issues of MPWT for EIA road sector in Cambodia in the 1st Seminar May 4th
4 th EIA-TF Meeting Date: 26/04/2017	<ul style="list-style-type: none"> • To present and discuss on draft table of contents of Road Environmental Guideline 	<ul style="list-style-type: none"> • EIA-TF members and Advisor from MoE have agreed primarily on title of the guidelines as “Road Environmental Guidelines” and Table of Content of the guidelines
5 th EIA-TF Meeting Date: 14/July/2017	<ul style="list-style-type: none"> • To discuss on future schedule for EIA/EMP team of TF members’ activities • To confirm on the draft table of contents of REG • To inform and confirm technical meeting schedule for July and August 2017 	<ul style="list-style-type: none"> • EIA-TF members are fine with the revised development schedule of the REG. The revised draft version will be finalized by middle of October 2017 • Table of Contents of REG has been revised a little bit • EIA-TF meeting will be organized in every week till early of August 2017
6 th EIA-TF Meeting Date: 20/July/2017	<ul style="list-style-type: none"> • To demonstrate how to use noise Measurement tool • To present on noise measurement methods • To inform about revised REG development schedule 	<ul style="list-style-type: none"> • EIA-TF members are aware of noise measurement methods and involve in the demonstration of noise measurement • Taskforce members agreed that the draft REG will be finalized in the middle of December 2017
7 th EIA-TF Meeting Date: 27/July/2017	<ul style="list-style-type: none"> • To discuss on how to reflect involvement phases by MPWT for the REG • To overview on the 3rd country technical exchange with Myanmar 	<ul style="list-style-type: none"> • Involvement phases by MPWT for the REG has been clarified with EIA-TF members • EIT-TF members are aware of schedule, purpose, and numbers of participants from Cambodia
8 th EIA-TF Meeting Date: 03/08/2017	<ul style="list-style-type: none"> • To finalize the table of contents and schedule of draft REG 	<ul style="list-style-type: none"> • Table of Contents of REG has been finalized by EIA-TF members and Advisor from MoE

EIA TF Meetings	Objectives	Results
	<ul style="list-style-type: none"> To confirm draft contents of 3rd country technical exchange 	<ul style="list-style-type: none"> REG will be translated into Khmer version completely at the end of January before the 2nd JCC meeting EIA-TF members have to contribute to prepare the content of REG by October 20th EIA-TF members are aware of activities of 3rd country technical exchange in Myanmar clearly
<p>9th EIA-TF Meeting</p> <p>Date: 14/09/2017</p>	<ul style="list-style-type: none"> To confirm Outline of Third Country Technical Exchange Program To summarize preparations and activities for the program To follow up the EIA-TF members' contribution to the REG 	<ul style="list-style-type: none"> Outline of Third Country Technical Exchange Program in Myanmar has been confirmed with EIA-TF members Preparations and activities for the program has been summarized and agreed by the EIA-TF members EIA-TF members' contribution in term of preparing the content of REG is on going
<p>10th EIA-TF Meeting</p> <p>Date: 12/10/2017</p>	<ul style="list-style-type: none"> Presentation on Tasks and the Implementation Issues of MPWT for EIA Road Sector in Cambodia Confirming the logistic matters for the third country technical exchange Follow-up the progress of taskforce members' contribution to draft REG 	<ul style="list-style-type: none"> There is a suggestion to shorten the presentation on the Tasks and the Implementation Issues of MPWT for EIA Road Sector in Cambodia due to time limited Logistic matters for the third country technical exchange in Myanmar has been informed and clarified clearly with EIA-TF members EIA-TF members have contributed continuously in term of preparing the content of REG
<p>11th EIA-TF Meeting</p> <p>Date: 30/11/2017</p>	<ul style="list-style-type: none"> To discuss and finalize Chapter 1 and 2 of draft REG To get some opinions on important items in Chapter 3 of REG 	<ul style="list-style-type: none"> EIA-TF members have commented on Chapter 1 and 2 of the REG to make the draft more comprehensive EIA-TF members also shared their thoughts that what items Chapter 3 should cover
<p>12th EIA-TF Meeting</p> <p>Date: 11/12/2017</p>	<ul style="list-style-type: none"> To discuss and finalize Chapter 3 and 4 of draft REG 	<ul style="list-style-type: none"> EIA-TF members have commented on Chapter 3 and 4 of the REG to make the draft more comprehensive REG is applied only for road sector only
<p>13rd EIA-TF Meeting</p> <p>Date: 14/12/2017</p>	<ul style="list-style-type: none"> To discuss and finalize Appendices of draft REG 	<ul style="list-style-type: none"> Appendices of the draft REG has been commented that it should be more comprehensive and understandable for the users
<p>14th EIA-TF Meeting</p> <p>Date: 20/12/2017</p>	<ul style="list-style-type: none"> To discuss and get general comments on draft REG 	<ul style="list-style-type: none"> EIA-TF members has shared their general comments on the draft REG, specifically chapter 1-3 Mr. Novida suggests to develop the REG for port and railway projects as well

EIA TF Meetings	Objectives	Results
<p>15th EIA-TF Meeting</p> <p>Date: 19/01/2018</p>	<ul style="list-style-type: none"> • To discuss and get general comments on draft REG • To get confirmation on presentation in the 2nd JCC meeting and Technical • To confirm the request on railway and port sector 	<ul style="list-style-type: none"> • EIA Department at MoE strongly suggested to revise the title of the guideline “from guideline should be replaced by review tips, manual or guidebook • Mr. Ito will present the REG in the 2nd JCC meeting. • Mr. Chhay Ya confirmed to present the result of Third Technical Exchange in Myanmar • One of EIA-TF members will present REG details in the 3rd Technical Seminar • Mr. Novida still suggests to have REG for railway and port sector
<p>16th EIA-TF Meeting</p> <p>Date: 26/01/2018</p>	<ul style="list-style-type: none"> • To discuss and get general comments on draft REG • To get confirmation on presentation in the 2nd JCC meeting and 3rd Seminar • To confirm proposing contents of the additional requests from DoP 	<ul style="list-style-type: none"> • EIA-TF members have shared their comments on the Chapter 4 and Appendices • Mr. Ito will present the REG in the 2nd JCC meeting. • Mr. Chhay Ya confirmed to present the result of Third Technical Exchange in Myanmar • One of EIA-TF members will present REG details in the 3rd Technical Seminar • Mr. Novida still suggests to have REG for railway and port sector
<p>17th EIA-TF Meeting</p> <p>Date: 01/02/2018</p>	<ul style="list-style-type: none"> • To discuss and confirm on comments made by MoE on REG • To get confirmation on presentation in the 2nd JCC meeting and 3rd Seminar 	<ul style="list-style-type: none"> • The title of REG should be “Road Environmental Guide” instead of “Road Environmental Guidebook”. But, the title should be finalized by H.E Chankosal • 2nd JCC meeting and 3rd Technical Seminar will be held on February 6th, 2018 • Mr. Vireak and Mr. Chhay Ya confirmed to present the draft REG in 3rd Seminar • An ICD Official will present the lesson learnt from technical exchange training in Myanmar.
<p>18th EIA-TF Meeting</p> <p>Date: 06/04/2018</p>	<ul style="list-style-type: none"> • To follow up and discuss on draft Prakas for REG • To consider the candidate of road/bridge projects for applying REG 	<ul style="list-style-type: none"> • Taskforce members had discussed and revised the draft Prakas as attached in separate file • The revised version of draft Prakas will be sent to Mr. Novida for his review before submitting to H.E. Nou Vaddhanak for his review. • Taskforce members was informed about applying REG in road/bridge project as a pilot practice and the project can be identified through discussion with ICD, RID and DoP. The detail information

EIA TF Meetings	Objectives	Results
		will be discussed in next meeting.
<p>19th EIA-TF Meeting Date: 22/05/2018</p>	<ul style="list-style-type: none"> • To follow up and finalize draft Prakas for REG • To identify existing project for applying REG 	<ul style="list-style-type: none"> • The draft Prakas and Preface were finalized as it is in separate file. The draft will be checked by Mr. Phallak before submitting to H.E. Nou Vaddhanak for his review. • Taskforce members preferred to have two projects for applying REG: National Road No. 5 improvement project (Japanese Loan project) as the first priority to apply EMP part of REG and National Road No. 3 improvement project (Chinese Loan project).
<p>20th EIA-TF Meeting Date: 20/05/2018</p>	<ul style="list-style-type: none"> • Acceptances from MPWT management staff for present MPWT's Projects for exercising or applying the REG • Candidate actual projects for exercising or applying the REG. 	<ul style="list-style-type: none"> • Director of Planning Department (Mr. Novida) will also ask to Mr. Phalla that some of the involved staff of National Road No.5 could be assigned as one of the EIA-TF members, if available. Because, if some of the involved staff of National Road No.5 could join the EIA-TF members, the monitoring REG will be more fruitful and the staff could get any capacities for Environmental Management Plan. • National Road No. 5 (South section) is chosen for applying REG
<p>21th EIA-TF Meeting Date: 06/06/2018</p>	<ul style="list-style-type: none"> • An Exercise of the EMP of the REG for South Section (Prek Kdam-Thlea Ma'am Section) of National Road No. 5 • 2. One-day Site Check in some parts of National Road No. 5 	<ul style="list-style-type: none"> • Taskforce member checked EIA report of NR No. 5 (South section) by using checklist of REG • The objective of the Site Check is to confirm i) some sampling sites of air, noise, and water, etc., ii) to verify the EMP or EMoP of the EIA Report for South Section The objective of the Site Check is to confirm i) some sampling sites of air, noise, and water, etc., ii) to verify the EMP or EMoP of the EIA Report for South Section of National Road No.5.
<p>22th EIA-TF Meeting Date: 13/06/2018</p>	<ul style="list-style-type: none"> • Review of an exercise of the EMP of the REG based on the EIA report of the South section of National Road No. 5 • Main points of EIA/EMP Guidebook for Ports Development Project • Plan and important check points of the one-day site check in the southern parts of the South section of NR- No.5 	<ul style="list-style-type: none"> • Cost estimates should be included the mitigation measure cost and the environmental monitoring cost. • We hope that the EIA/EMP Guidebook of the Ports Development Project for MPWT could prepared under assistances from the JICA Team in the near future. • Schedule and location to visit have been set

EIA TF Meetings	Objectives	Results
<p>23th EIA-TF Meeting</p> <p>Date: 21/06/2018</p>	<ul style="list-style-type: none"> • Review of One-day Site Check in some parts of South Section of National Road No. 5 • Climate Change Adaptation Basic Approaches for Transportation Project 	<ul style="list-style-type: none"> • Sampling Parameters for Each Environmental Item (Air, Noise, Vibration, Water) • Basic Measurement (Sampling) Methods of Each Environmental Item • Basic Concepts of Climate Change Adaptation for Bridge/Road and Railway • Examples of Adaptation Measures • Development with Climate Change Adaptation for Bridge/Road/Railway Project
<p>24th EIA-TF Meeting</p> <p>Date: 13/09/2018</p>	<ul style="list-style-type: none"> • Discussion of site check in Northern Parts Section of National Road No. 5 	<ul style="list-style-type: none"> • Mr. Ito briefly explained the objectives of trip i) to confirm some sampling sites of air, noise, vibration, and water, etc., ii) to verify the EMP, and iii) to confirm the environmental impacts caused by the Project construction activities.
<p>25th EIA-TF Meeting</p> <p>Date: 17/09/2018</p>	<ul style="list-style-type: none"> • Preparation of Site Check in Northern Parts Section of National Road No. 5 	<ul style="list-style-type: none"> • Mr. Ito mentioned that each member could check some monitoring points using the “Appendix 2 & Appendix 3: Checklist for Reviewing an EMP and EMoP for a Road Project” of the REG.
<p>26th EIA-TF Meeting</p> <p>Date: 28/09/2018</p>	<ul style="list-style-type: none"> • Review of the Site Check in Northern Parts (Battambang-Serei Saophoan) Section of National Road No. 5 	<ul style="list-style-type: none"> • Each participant of the Site Check explained the results of the Site Check using the “Appendix 2 & Appendix 3: Checklist for Reviewing an EMP and EMoP for a Road Project” of the REG. • Mr. Ito informed the Members that the REG is not authorized yet.
<p>27th EIA-TF Meeting</p> <p>Date: 04/12/2018</p>	<ul style="list-style-type: none"> • Pre-Work for Join field visit to “Actual” Environmental and Social Considerations Monitoring of South Section (Prek Kdam-Thlea Ma'am Section) of National Road No. 5 • REG Authorization 	<ul style="list-style-type: none"> • Mr. Ito explained that each member should review carefully “Important Confirmation Points for Verifying and Monitoring of REG through the Field Visit for an Actual Environmental Monitoring in the South Section of NR_No.5” before the Field visit, which was provided in the time. • The Senior Minister of MPWT agreed that the REG will be a Decision of MPWT.
<p>28th EIA-TF Meeting</p> <p>Date: 07/12/2018</p>	<ul style="list-style-type: none"> • To present main Points of EIA Guidebook for Railway Project for MPWT with Q&A • Final preparation/confirmation for the Joint Field Visit on 13th Dec 	<ul style="list-style-type: none"> • Taskforce members clarified some points on presentation on EIA guidebook for railway. • Taskforce members was informed clearly about field trip plan. • According to last short meeting results with Mr. Yamashita, who is very familiar with JICA Assistance Policies for Cambodia, the Ports or Railway EIA Guidebook Development for MPWT may difficult to apply as next JICA Assistance for EIA/EMP TF members.

EIA TF Meetings	Objectives	Results
<p>29th EIA-TF Meeting</p> <p>Date: 14/12/2018</p>	<ul style="list-style-type: none"> • Review of the REG by the Site Check in South Section of NR_ No. 5 on 13th Dec • Further Recommendations for REG Monitoring • Ideas of the Next JICA Assistance Candidate Components for EIA/EMP TF members 	<ul style="list-style-type: none"> • Mr. Ito pointed out for the REG monitoring referring to “Appendix 3: Checklist for Reviewing an EMO for a Road Project” of the REG” as follows • Mr. Ito mentioned that the following items of the Checklists could be added or be updated through further actual uses of the REG for the other road development projects, although it could not be found any updates parts of the REG in this time.
<p>30th EIA-TF Meeting</p> <p>Date: 11/12/2019</p>	<ul style="list-style-type: none"> • Final Review of the REG additional Site Check • Closing TF meeting 	<ul style="list-style-type: none"> - JICA Project Team and TF members discussed output of the Site Check with its reviewing, and • - They agreed TF closing

J2-4. REG Monitoring Report

PDM Means of Verification 2.5.1 JICA Expert Report (REG Monitoring Report)

This Report is described in terms of EIA and EMP Process, but not including resettlement issues, based on relevant documents and information collections in Cambodia.

1. Necessity and Objectives of REG Monitoring

1.1 Necessity of REG Monitoring

Main tasks of the MPWT officials related to EIA/EMP of the road development projects, are to review the EIA/EMP Report, including checking the environmental and social monitoring activities at the sites, which are proposed/identified by the EMP/Environmental Monitoring Plan (EMoP), and Environmental Monitoring Report (EMoR). The Project Owner is the MPWT.

In these situations, the Road Environmental Guidebook (REG) was prepared for the MPWT officials in February 2018. An attachment included a checklist for reviewing the EIA, the EMP, the EMoP, and the EMoR. And the REG was authorized as a MPWT's "Decision" in the end of July 2019, which will be a legal basis within MPWT as one of the outcomes of the CESCOR Project.

The REG was prepared through a series of the regular EIA/EMP technical meetings, which are initiated by the JICA Expert, among the EIA/EMP TF members. The REG is also a first practical guidebook to review the EIA/EMP of the road development projects for the MPWT officials. The REG should be monitored through applying to actual road development projects, which are needed to any EIA/EMP related activities by the MPWT's officials.

These REG Monitoring activities are intended contribute to improve the necessary related technical knowledge and skills for the relevant MPWT's officials in terms of reviewing the EIA/EMP for the road development projects.

Also, the Checklists of the REG were prepared as flexible checklists taking into account for more applicable uses for the road development projects. Therefore, these Checklists in particular, should be monitored through the document review of the EIA/EMP Reports and rapid site checks related to the Environmental and Social Monitoring of the actual road development projects.

Through the above EIA/EMP related activities by the EIA/EMP TF members, the REG, in particular the Checklists could be considered any updates, if necessary, so that the REG will be more useful for the MPWT's related officials.

1.2 Objectives of REG Monitoring

The objectives of the REG Monitoring are:

- i) The MPWT's related officials could improve more important reviewing technical points of the EIA/EMP through applying the REG for actual road development projects
- ii) To consider any updates, if necessary, through the reviewing the EWEMP using the Checklists of the REG, so that the Checklists of the REG will be more useful for the MPWT's officials.

2. Actual REG Monitoring Activities

During the CESCOR Project, from the begging of June to the middle of December, 2018, the following REG monitoring activities were conducted through a series of the EIA/EMP TF Technical Meetings and the 4 times of the Site Checks on some points of the project site of the National Road No.5.

2.1 Selection of the Actual Road Development Project for the REG Monitoring

The EIA/EMP-TF members and the JICA Expert has the following candidate project ideas for the REG Monitoring:

- 1) National Road No.5 (NR_No.5), Prek Kdam-Thlea Ma'am Section (South Section) Construction started on middle of May 2018: Japanese Loan Project

- 2) National Road No.5 (NR _ No.5), Battambang-Serei Saophoan Section (North Section)
Construction started on Feb. 2018: Japanese Loan Project
- 3) National Road No.3 Improvement Project, Construction already started: Chinese Loan Project
- 4) National Road No.4 Project, LIA will be done on Dec.2018: Chinese Loan Project
- 5) National Road No.6 Project, Construction already started: Chinese Loan Project
- 6) The Project for Urgent Replacement of Bridges in Flood-Prone Areas, Construction will be started on June 2018, Japanese Grant Aid Project

The above 3) to 6) projects are requested from EIA-TF members mainly for the site visit works. However, the REG monitoring is necessary to review each concrete EIA Report (including EMP parts) as the essential prerequisite. The above 1) and 2) projects were publicized each EIA (including EMP parts) Report. Therefore, the above 1) and 2) were decided as the REG Monitoring Projects.

2.2 Document Reviews of the EIA/EMP Report of the selected Road Development Projects

1) EIA/EMP Document Report Reviews of the South Section of NR _No. 5

The following REG Monitoring works were conducted mainly in the 21st EIA/EMP TF Meeting:

- Review the following EIA Report main items quickly using "Appendix 1: Checklist for Reviewing and EIA Report for a Road Project" of the REG
 - Executive Summary
 - Introduction
 - Methodologies
 - Project Description
 - Description of Existing Environment in the Project Area
 - Environmental Impacts and mitigation measure
 - Environmental Management Plan (EMP)
 - Conclusions and recommendations
- Review the EMP part items using "Appendix 2: Checklist for Reviewing and EMP for a Road Project" of the REG
 - Institutional Responsibilities
 - Project stage (pre-operation, operation and closure)
 - Possible negative environmental and socio-economic items and each impact
 - Proposed mitigation measures for each project activity
 - Cost estimate and Schedule for conducting each mitigation measure
- Review the following important contents of the EMP using "Appendix 2: Checklist for Reviewing and EMP for a Road Project" of the REG
 - Each possible negative impact and the mitigation measures
 - "Key Questions" (7 Sentences) of the Appendix 2 of the REG

Main Discussions in the 21th EIA/EMP TF Meeting

<Question 1>

- In the Environmental Management Plan (EMP) Section (Chapter 7) of this EIA Report, there are combined Environmental Management Plan Description items and Environmental Monitoring Description item such as sampling parameters. On the other hand, the EMP section does not include each mitigation measure.

< Reply 1 >

- It is OK, the other Chapter (Chapter 5) of this EIA Report includes each mitigation measure description. Although, structures of EIA Report in Cambodia is regulated by an MoE's decree, the structure of description items of the EMP, EMoP, and Mitigation Measure are actually depended on each EIA report. But the any necessary items/contents have to be described in the EIA Report.

<Question 2>

- "Key question" of the No.4 is identified. How to consider and deal with any positive impacts by the Project?

< Reply 2>

- Do you have any ideas of positive impacts by the Project? I would say that Project will cause regional economy development through improvement of road network in the area. This is an example of the positive impacts.
- We should consider how to enhance for possible positive impacts as well. In my idea, for this positive impact, any planning for more comprehensive road network could be one of the enhancement measures. Anyway, we should consider not only negative impacts, but also positive impact.

2) Detailed EMP Report Document Review of the South Section of NR_ No. 5

The following REG Monitoring works were conducted mainly in the 22th EIA/EMP TF Meeting:

Review the following EMP detailed contents using "Appendix 2: Checklist for Reviewing and EMP for a Road Project" of the REG

- Possible negative environmental and socio-economic items and each impact
- Cost estimate and Schedule for conducting each mitigation measure

The EIA/EMP TF members mentioned the following main comments and the JICA Expert replied as follows:

Main Discussions in the 22nd EIA/EMP TF Meeting

<Comment 1>

- In terms of "3. Possible Negative Environmental and Socio-Economic Items and Each Impact" of the Appendix 2: Checklist for Reviewing an EMP for a Road Project of the REG, there are few detail descriptions in the EMP Section of the EIA Report for hydrology, vulnerable species (habitat), soil erosion, local violence, and traffic safety item. On the other hand, the some hydrology and species habitat items were described in the Section of the Environmental Impacts and Mitigation Measures and the Annex of the EIA Report, respectively.

< Reply 1>

- Most of your comments were understandable and appropriate. When you review an EIA Report, I hope those kinds of the comments should be mentioned with the reasons and be submitted to the local environmental consultant or the Ministry of Environment (MoE).

<Comment 2>

- In terms of "5. Cost Estimate and Schedule for Conducting Each Mitigation Measure" of the Appendix 2: Checklist for Reviewing an EMP for a Road Project of the REG, the cost estimates should be included the mitigation measure cost and the environmental monitoring cost?

< Reply 2>

- In the EIA. review phase or EMP preparation phase, the cost estimate is mainly for each necessary mitigation measure, but the overall cost estimate for total environmental monitoring should be included as the contingency cost, for example.
- Usually, each necessary mitigation measure cost could be get from the construction contractor or similar project owners. The total overall environmental monitoring cost is relatively easy to get from the Local Environmental Consultant.

In terms of the EIA (including EMP) Report Document Review of the North Section was conducted from the end of June to the end of September 2018 by the EIA/EMP TF members by themselves.

2.3 Site Checks the Environmental Monitorings, which were proposed by the EMP and EMoP

1) Site Check of Candidate Monitoring Points at a South Section of NR_No. 5 on 20th June, 2018

The specific objectives of this Site Check: are i) to confirm some sampling sites of air quality, noise/vibration, and water quality, which were identified as the baseline data of the EIA Report, which will be candidate of the future monitoring points, ii) to review the EMP/EMoP using Appendix 2 and Appendix 3 of the REG.

During the Site Check, the EIA/EMP TF members could mainly understand and review the following technical points:

- Sampling (Monitoring) Parameters and the Location of Each Environmental Item (Air, Noise/Vibration, Water Quality).
- Basic Sampling (Monitoring) Methods of Environmental Item (air quality, noise/vibration, water quality)



Photo1: Review a Noise Sampling Site



Photo2: Review an Water Sampling

2) Site Checks of Monitoring Activities at North Section of NR_No. 5 on 25th and 26th Sep., 2018

The specific objectives of the site check are i) to confirm some sampling sites of air quality, noise/vibration, and water quality, ii) to review the EMP/EMoP, and iii) to confirm the environmental impacts caused by the Project construction activities using Appendix 2 and Appendix 3 of the REG.

During the Site Checks, the EIA/EMP TF members could mainly understand and review the following technical points:

- Monitoring Parameters/Sites for Each Environmental Item (Air, Noise/Vibration, Water Quality)
- Overall contents of some possible negative environmental impacts and the mitigation measures, which were proposed in the EMP



Photo3: Dust Impacts along the Section



Photo4: Sprinkling at a Construction Site

3) Site Checks of the Monitoring Activities on the South Section of NR_No. 5 on 13th Dec., 2018

The specific objectives of the check are i) to confirm some monitoring sites of air quality, noise/vibration, and water quality , ii) to review the "EMP" and "EMoP", and iii) to observe some possible environmental and social negative impacts caused by the project construction activities, including a campsite.

During the Site Checks, the EIA/EMP TF members could mainly understand and review the following technical points:

- Monitoring Sites for Each Environmental Item (Air, Noise/Vibration, Water Quality)
- Water quality deterioration risks from candidate "Borrow Pit"
- Water quality contamination risks at a "Campsite", in particular, from improper maintenance of septic tank, and the other stockyards.
- Public health risk at a Campsite, caused by unfavorable workers living environments (sleeping places, etc.)



Photo5: Water deterioration risk at a Candidate Borrowing Pit



Photo6: Water deterioration risk at a Campsite (Septic Tank)

3. REG Monitoring Results

3.1 Overall REG Monitoring Results

Through the discussion with the EIA/EMP TF members in the 26th EIA/EMP TF Meeting on 28th Sep. 2018, it could be understood as follows as the overall REG monitoring results:

- The EMP and EMoP of the North Section of NR_No. 5 were basically reasonable.
- Most of the items of Appendix 2 were basically applicable for the Section, except for the item of local violence/conflicts increasing
- In particular, item of air, water, noise, subsidence, and soil erosion were more applicable for the Section.
- We understood that cost estimate item for conducting each mitigation measure are also necessary for the EMP.

Through the discussion with the EIA/EMP TF members in the 29th EIA/EMP TF Meeting on 14th Dec. 2018, it could be understood as follows as the one of the REG monitoring results:

- The EMP and EMoP of the South Section of NR No. 5 were almost all reasonable.
- Most of the items of Appendix 3 were basically applicable for the South Section.
- The Appendix 3 was useful for the South Section. It could not be found any specific updates parts. Therefore, it is concluded that the REG, in particular, the Checklists of the "Appendix 2: Checklist for Reviewing and EMP for a Road Project", and "Appendix 3: Checklist for Reviewing and EMoP for a Road Project" of the REG were very useful for the EIA/EMP TF members, in order to review the EIA. EMP, and EMoP for the North Section and the South Section of the NR No.5.

It was not found that any further specific update parts of the above Checklists of the REG..

3.2 Further Recommendations

The followings could be proposed through the above REG Monitoring activities as the further recommendation:

1) Further Uses of the REG by MPWT officials related to EIA/EMP of the other road development projects

The following items of the Checklists could be added or be updated through further actual uses of the REG for the other road development projects, although it could not be found any updates parts of the REG in this time:

- Appendix 1: "7. Environmental Impacts and mitigation measure"
- Appendix 2: " 3. Possible negative environmental and socio-economic items and each impact"
- Appendix 2: "4. Proposed Mitigation Measures for each project activity":
- Appendix 3: "3. Monitoring Items and Parameters":

Based on the further reviewing the EIA. EMP, and EMoP of the road development project, more real and useful examples/facts for the above items should be accumulated within the MPWT,' and then, the Appendices could be more useful for the MPWT official.

2) Actual Monitoring or Uses of the Appendix 4: Checklists for Reviewing EMoR for any Actual Road Project

In this time, it could not be monitored the REG for reviewing the EMoR, When the MPWT get the real EMoR of the actual road development project, it is recommended that additional REG Monitoring should be done for the EMoR using the Appendix 4: Checklist for Reviewing an EMoR of the REG..

JICA Expert Reports

J3: ROW Management

J3-1: Social Considerations Analysis:

Lessons Learned on ROW Management Based on the Land Management Framework in Cambodia and Other Countries

J3-2: Development Plan of Draft RMS

J3-3: List of ROW Management Taskforce Meeting Records

RMG Authorization Process/ Draft RMS Development/ Draft RMG Preparation/ Draft RMS- TP Preparation/ Tentative RMM Preparation/ Tentative RMD Preparation

J3-4: RMM and RMD

J3-5: Budget Plan for RMS Implementation

J3-1: Social Considerations Analysis:

Lessons Learned on ROW Management Based on the Land Management Framework in Cambodia and Other Countries

JICA EXPERT REPORT

OF THE PROJECT

FOR CAPACITY ENHANCEMENT

ON ENVIRONMENTAL AND SOCIAL

CONSIDERATIONS

IN IMPLEMENTING AGENCY

IN ROAD SECTOR

IN THE KINGDOM OF CAMBODIA

**~Social Considerations Analysis: Lessons
Learned on ROW Management Based on the
Land Management Framework in Cambodia
and Other Countries~**

DECEMBER 2019

CTI Engineering International Co., Ltd. (CTII)
Environment and Social Infrastructure Consultant Co., Ltd. (ESIC)
Hanshin Expressway Company Limited (HEX)

SUMMARY

JICA Expert Report shows outputs of the following activity based on Output 1 of the Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in the Kingdom of Cambodia.

Output 1
Implementation framework for the project is strengthened based on past experiences and present situation on ESC and ROW management
Activity
1.1 Analyze past projects, current tackling issues on EIA/EMP and ROW management in terms of ESC-GL
1.2 Collect and analyze information on land management framework of land management system in Cambodia
1.3 Conduct institutional framework analysis for MPWT
1.4 Conduct a needs assessment for training and develop capacity enhancement plan and procurement plan

Chapter 1 Environmental Social Consideration (ESC) Analyses (based on Activity 1.1)

Currently, following issues are recognized as urgent tackling issues on Right of Way (ROW):

- ◆ ROW issues in Cambodia has been discussed as a part of resettlement issues, such as National Road No.1 Project, Tsubasa Bridge Project, and National Road No.5 Project under Japanese ODA Loan;
- ◆ MPWT commenced ROW management apart from resettlement as the road management authority. The activities include sign board for education of the people, staking ROW poles along the major national road, and public consultation meeting;
- ◆ MPWT/Government of Cambodia also issued legal documents such as ROW Sub-Decree, Srachor 007, etc. to establish clear ROW management. However, there are some important preconditions for ROW management, such as border between urban and non-urban area.
- ◆ Social environment around the ROW issues become complicated by land registration in private land side, re-encroachment of ROW after the road widening project, etc.
- ◆ It is required to review definition of ROW in Cambodia, and both political and practical way of management shall be discussed through CESCO. During the discussion, inter-ministerial coordination with Ministry of Land Management, Urban Planning, Construction (MLMUPC) and Local authorities are necessary in terms of land registration, construction restriction, and administrative measures at local level.

This CESCO Project is expected any contribution for establishing a system for ROW management with guidelines, database, mapping, and training plan.

Chapter 2 ROW Management Analysis (based on Activity 1.2)

Definition of ROW was discussed as a basis for discussing ROW management. ROW in Cambodia has two aspects. One is the status of state land and another is the land for future road development. These definition and roles of ROW are confirmed by legal basis, national/international standards, and past activities on ROW in Cambodia. Finally, typical cross-section of existing road and ROW are displayed with tackling issues in the future.

Chapter 3 Institution Analysis (based on Activity 1.3)

Institutional analysis in this report focused on overall structure of integrated ROW management system including other governmental authorities beyond MPWT. According to the institutional analysis, there are observed several groups of relevant authorities described as below:

- Ministry of Land Management, Urban Planning and Construction
 - Land registration
 - Construction permits
 - Urban Planning
- Ministry of Interior
 - Demarcation of Urban and Non-Urban area for ROW management
- Ministry of Economy and Finance
 - Budgetary support for ROW management
 - Involuntary Resettlement
- Local Authorities
 - Administrative implementation of ROW activities
 - Public awareness and consultation

JICA EXPERT REPORT
OF THE PROJECT FOR CAPACITY ENHANCEMENT
ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS IN IMPLEMENTING AGENCY
IN ROAD SECTOR IN THE KINGDOM OF CAMBODIA

TABLE OF CONTENTS

Chapter 1 Environmental Social Consideration (ESC) Analyses.....	6
1.1 Past Major Projects Related to ROW Issues in Cambodia.....	6
1.2 Specific Issues of the Past Projects in Terms of ROW	9
Chapter 2 ROW Management Analysis	13
2.1 Definition of ROW	13
2.2 Legal Basis of ROW in Cambodia	14
2.3 Present Status of ROW in Cambodia	19
2.4 ROW Management Guidelines (RMG).....	23
Chapter 3 Institutional Analysis	24
3.1 Institutional responsibilities beyond MPWT.....	24
Chapter 4 Recommendation for ROW Use in the Future.....	26
4.1 Procedures for ROW Usage	26
(1) Possible Public Facilities within ROW Area.....	27
(2) Temporary Use by Public Utilities.....	28
(3) Temporary Use by Other Government Offices	28
(4) Temporary Use Special Case and Points to be Noted (Private utilities/facilities in ROW).....	28
4.2 Methods of Soft Approach.....	29
(1) Target area.....	30
(2) Permit authority.....	30
(3) Data management of temporary permission	30
(4) Use permission for a fee and use permission for free	30
(5) Permission for Temporary Land Use within ROW	31
(6) Permission conditions	32
(7) Temporal Use Fee	32
(8) Consultation with relevant authorities	33
(9) Others and Administrative Disposal.....	33

Chapter 1 Environmental Social Consideration (ESC) Analyses

This Chapter shows an output of the following activity based on Output 1 of the Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in the Kingdom of Cambodia (hereinafter referred to as “the Project”).

Output 1
Implementation framework for the project is strengthened based on past experiences and present situation on ESC and ROW management
Activity
1.1 Analyze past projects, current tackling issues on EIA/EMP and ROW management in terms of ESC-GL
Objectively Verifiable Indicator
1.1 Based on the JICA Guidelines for Environmental and Social Considerations (ESC-GL), lessons learned from past experiences are organized and current issues on ESC and ROW

This Chapter shows analysis on past projects related to ROA management in Cambodia. Most of the past experiences of ROW is emerged in the process of land acquisition and resettlement, especially in the road widening projects described as below;

1.1 Past Major Projects Related to ROW Issues in Cambodia

Past experiences and learnings on ROW management through practical projects in Cambodia are important to discuss effective measures in the future. ROW issues have been discussed mainly as a part of land acquisition and resettlement in Cambodia. Table 1.3 shows major road and bridge projects under ownership of MPWT and following outlines are based on websites of JICA and ADB.

Table 1.1 Major Projects Related to ROW Issues

	Project Name	Donor	Report
1	National Road No.5 Improvement Project (Battambang-Sri Sophorn Section)	JICA	RAP
2	National Road No.5 Improvement Project (Prek Kdam Bridge-Thlea M'am Section)	JICA	RAP
3	National Road No.5 Improvement Project (Thlea Ma'Am-Battambang Section and Sri Sophorn-Poipet Section)	JICA	RAP
4	Phnom Penh - Bavet Expressway Development Project	JICA	RAP
5	The Construction of Second Mekong Bridge in Cambodia	JICA	RAP
6	National Road No.1 Improvement	JICA	RAP
7	Greater Mekong Subregion: Phnom Penh to Ho Chi Minh City Highway Project	ADB	RAP
8	Primary Roads Restoration Project	ADB	Audit

1.1.1 National Road No.5 Improvement Project (Battambang-Sri Sophorn Section)

The objective of the Project is to increase the transportation capacity as well as to improve the logistics efficiency in the National Road No.5 which connects Phnom Penh Capital and Thai border, by improving the condition of existing road and constructing the new bypass, thereby contributing to economic development of Cambodia.



Project Owner	MPWT
Development Partner	JICA (ODA Loan)
Documentation	Resettlement Action Plan (RAP) https://www.jica.go.jp/english/our_work/social_environmental/id/asia/southeast/cambodia/c8h0vm000090vlnk-att/c8h0vm0000a58c16.pdf
Notes	- ROW for existing 1-digit national road (30m each from centerline) - Bypass as new alignment

1.1.2 National Road No.5 Improvement Project (Prek Kdam Bridge-Thlea M'am Section)

The objective of the Project is to increase the transportation capacity as well as to improve the logistics efficiency in the National Road No.5 which connects Phnom Penh Capital and Thai border, by improving the condition of existing road and constructing the new bypass, thereby contributing to economic development of Cambodia.



Project Owner	MPWT
Development Partner	JICA (ODA Loan)
Documentation	Resettlement Action Plan (RAP) https://libportal.jica.go.jp/library/Data/DocforEnvironment/RAP-RIP/SoutheastAsia/CambodiaNR51/RAP.pdf
Notes	- ROW for existing 1-digit national road (30m each from centerline) - Bypass as new alignment

1.1.3 National Road No.5 Improvement Project (Thlea Ma'Am-Battambang Section and Sri Sophorn-Poipet Section)

The objective of the Project is to increase the transportation capacity as well as to improve the logistics efficiency in the National Road No.5 which connects Phnom Penh Capital and Thai border, by improving the condition of existing road and constructing the new bypass, thereby contributing to economic development of Cambodia.



Project Owner	MPWT
Development Partner	JICA (ODA Loan)
Documentation	Resettlement Action Plan (RAP) https://libportal.jica.go.jp/library/Data/DocforEnvironment/RAP-RIP/SoutheastAsia/CambodiaNR51/RAPCambodiaRoadNo5.pdf
Notes	- 2nd compensation for project affected households who once compensated by ADB's past project (Primary Roads Restoration) and still remain in the area of ROW - ROW for existing 1-digit national road (30m each from centerline) - Bypass as new alignment

1.1.4 Phnom Penh - Bavet Expressway Development Project

The objective of the Project is to increase the transportation capacity as well as to improve logistics efficiency in the region from Phnom Penh to Bavet which connects Phnom Penh City and Vietnam border, by constructing expressway, thereby contributing to economic development of Cambodia and Greater Mekong Sub-region.



Project Owner	MPWT
Development Partner	JICA (ODA Loan)
Documentation	Resettlement Action Plan (RAP) *Not yet disclosed
Notes	- Most section will be newly declared ROW

1.1.5 The Construction of Second Mekong Bridge in Cambodia (TSUBASA Bridge)

The project aims to build a bridge over Mekong River at the ferry crossing point of Neak Loeung. The project have approximately 6km long cable-stay bridge, approach bridges, and approach roads that connects National Road No.1. The connection point between the eastern approach road and existing National Road No.1 was encroached again just after the construction.



Project Owner	MPWT
Development Partner	JICA (Grant Aid by Government of Japan)
Documentation	Resettlement Action Plan (RAP) *Not yet disclosed
Notes	- Most section will be newly declared ROW including approach roads and bridges

1.1.6 National Road No.1 Improvement (Phnom Penh – Neak Loeung)

The project mainly aims to rehabilitate National Road No.1. Because main construction is principally limited along existing national road, most impact areas are within set ROW. During the resettlement process, provisional road width (PRW) were introduced to minimize affected household comparing to all ROW clearance. The project was separated four stages and have been completed in 2017.



Project Owner	MPWT
Development Partner	JICA (Grant Aid by Government of Japan)
Documentation	Resettlement Action Plan (RAP) *Not yet disclosed
Notes	- ROW is different in section by section in Phnom Penh City - Most sections are updating of existing 1-digit national road with ROW of 30m in both sides from centerline

1.1.7 Greater Mekong Sub-region: Phnom Penh to Ho Chi Minh City Highway Project

The project targeted a section of Neak Loeung and Bavet, the border town between Cambodia and Vietnam, of exiting National Road No.1. ROW was declared by Praks 06 (1999) during the discussion of the project and finally, ROW for the project followed the Praks, namely 30m from centerline in both side of the road. Because the project principally did not include road widening, most affected households were located within ROW along the existing road.



Project Owner	MPWT
Development Partner	ADB Loan
Documentation	Resettlement Action Plan (RAP)
Notes	- Most sections are updating of existing 1-digit national road with ROW of 30m in both sides from centerline

1.1.8 Primary Roads Restoration Project

The project included rehabilitation of some sections of National Road No.5, 6, and 7. Based on the Prakas 06 (1999), different 1-digit national roads have different width of ROW. For example, National Road No. 5 has ROW of 30m from its centerline in both sides, meanwhile National Road No.6 and 7 have ROW of 25m. ROW of 1-digit National was unified later by Sub-decree on ROW (2009). This historical change caused uncertainty of definition and rights of land along ROW lines. Among the project, some sections in National Road No.5 is planned to rehabilitate again by Japanese ODA Loan. During the process, second time payment to people who remained to stay within ROW were observed.



Project Owner	MPWT
Development Partner	ADB Loan
Documentation	Resettlement Action Plan (RAP)
Notes	- Most sections are updating of existing 1-digit national road with ROW of 30m in both sides from centerline - No permanent land acquisition (within ROW) - 1,905 Households affected with 9,525 Persons

1.2 Specific Issues of the Past Projects in Terms of ROW

1.2.1 Double Payment to same PAPs inside ROW

During the resettlement phase, people who has properties within ROW is not always relocated out of ROW and remain staying within ROW if the project affected areas are smaller/narrower than ROW. In such cases, project affected persons (PAPs) once received compensation/assurances but continued their encroachment within ROW. After several years of the resettlement, if another new projects come to the site, the compensated PAPs may be compensated again by the new project. This kind of practical instances have been observed in National Road No.5 Project and National Road No.1 Project where new approach roads from Tsubasa bridge caused second resettlement for the PAPs along the National Road No.1.

The outline of the case of National Road No.5 is described as below including Figure 1.4 and Table 1.4. Because of past inappropriate treatment on compensation and ROW management, entitlement matrix for the section became complicated structure as shown in that table.

- ✓ Properties excluding land within 12.5m (COI) were principally once compensated by ADB Projects, namely Primary Road and GMS Road, with cut-off-date
- ✓ Based on above principle, Cambodian side will not "Compensate" for the properties located within COI, however, will provide "Assistance" equivalent to compensation as well as other treatment, such as allowance for specific situations, resettlement site for landless cases, income restoration program for target groups, and etc.
- ✓ If there were specific grievance regarding properties within 12.5m, Cambodian side shall take consider the cases as same as properties located out of 12.5m.

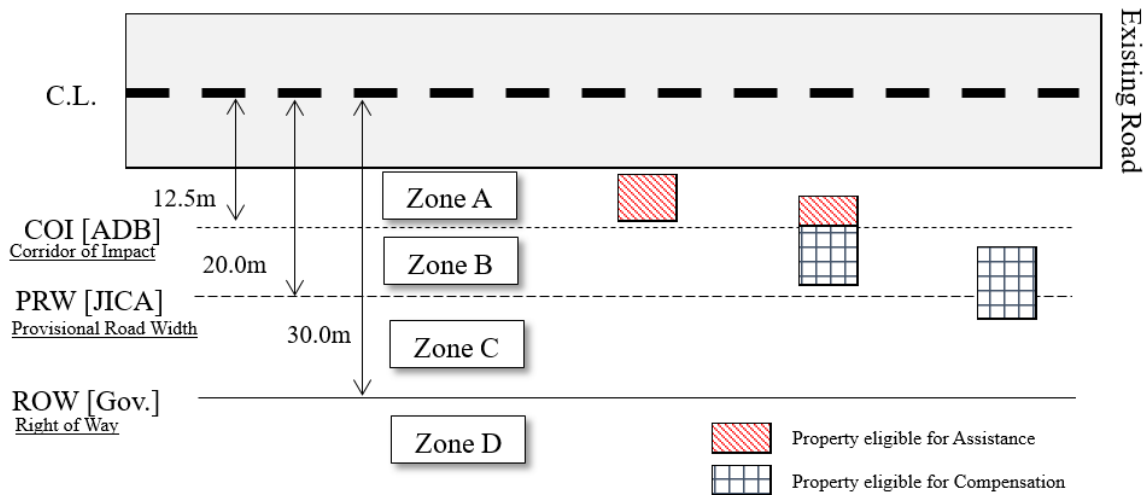


Figure 1.1 Image of Zoning of ROW, PRW, and COI

Table 1.2 Policy for Compensation / Assistance

Zone	Ordinal Compensation Policy				Special Assistance	
	Compensation		Allowance (Transportation Disruption, Venerable, etc.)	Relocation Site for Landless Cases	Assistance for past COI	
	Land	Structure and other Property			Structures	Other properties such as fruit tree
Zone A	NO	NO	YES (1 time)	YES	YES	YES
Zone B	NO	YES			No	No
Zone C	NO	YES			No	No
Zone D	YES	YES			No	No

Assistance for the past COI is based on setting unit price for each property within 12.5m. The price was based on minimum market price of replacement cost survey (RCS). See picture in case of structure as below;

House Type X: Compensation Unit Price is 40 USD/m²
(Average of sample survey of RCS, (1) 30USD, (2) 40USD, (3) 50USD)
Assistance Unit Price is 30 USD/m² (minimum price of RCS sample)

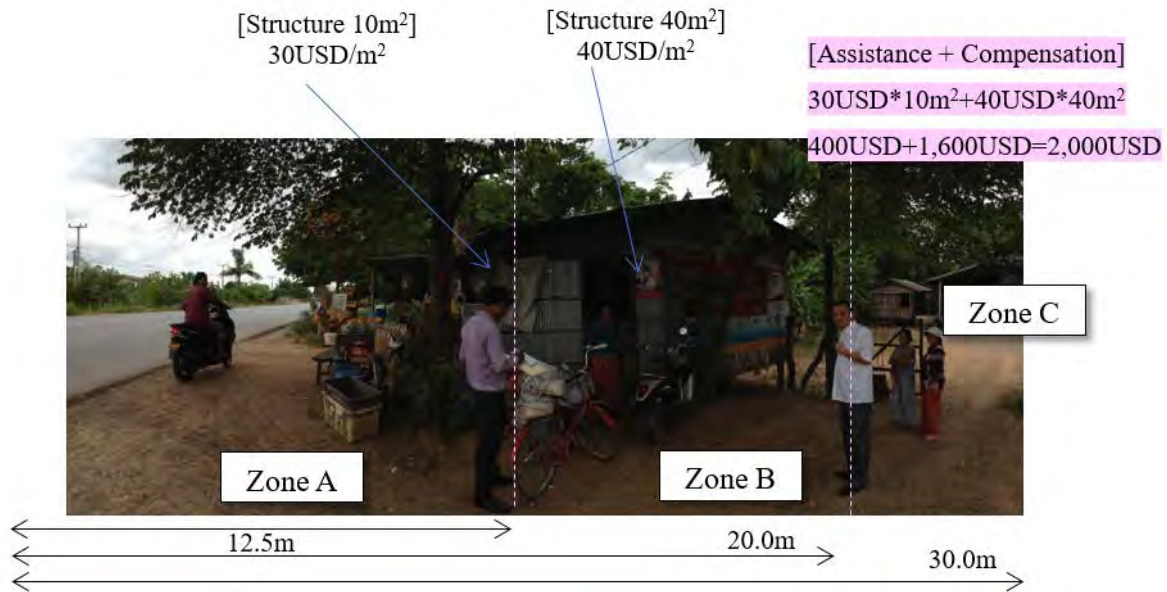


Figure 1.2 Cross-Section of ROW, PRW, and COI

1.2.2 Re-Encroachment of ROW just after construction completion

Due to insufficient management of state land, even the area within ROW just after construction can be encroached again by the people who once received compensation. It is very common along the National Road No.1 Phnom Penh – Neak Loeng section where Japanese Grant Aid improved the road. Another typical case was reported at the connection point of eastern approach road of Tsubasa Bridge and exiting National Road No.1 which was improved by ADB. Almost parallel with construction finalization process, people commenced rebuilding their house over road structures and encroach ROW land next to improved road. Therefore, ROW management after improved road is also important.



1.2.3 Relocation out of ROW or Within ROW

When the specific project comes, RAP requires Project Affected Persons to setback until Corridor of Impact (COI) / Provisional Road Width (PRW) which usually within ROW. Therefore, people still can live within ROW even after administrative action, relocation, was implemented. This cause the problem of second compensation mentioned in former part. Once MPWT recommended people to setback until ROW line and pay compensation all structure within ROW even the project was not required all width of ROW in the National Road No.1 Project assisted by Japanese Government. However, the people did not relocate until ROW after receiving compensation and remain within ROW. In that case, jealousy between the people who promised to setback until ROW and people only get compensation until COI/PRW originally.

1.2.4 ROW in populous area and declaration by local government

Former Phnom Penh Municipality (MPP) declared ROW as Deka independently from Prakas 06 (1999) just several months before the Praks. According to the Municipality declaration, for example, National Road No.1 close to Phnom Penh had ROW of different width described as below;

a) Land law (2001)

- Any person who, for no less than five years prior to the promulgation of this law, enjoyed peaceful, uncontested possession of immovable property that can lawfully be privately possessed, has the right to request a definitive title of ownership

b) Prakas 06 (MEF, September 1999)

- ROW of NR.1 is 30m
- Restriction of ROW is not applicable to the **populous places**

c) MPP's Deka (Phnom Penh Municipality, June 1999)

- Present ROW from Monivong Bridge to Chbar Ampeou Postal Building [Section I: 0+100 - 0+253]
- ROW of 15m or fence of pagoda from Postal Building to Niroad Pagoda [Section II: 0+253 - 1+300]
- ROW of 25m from Niroad Pagoda to boarder of Kandal Province and MPP [Section III: 1+300 -]

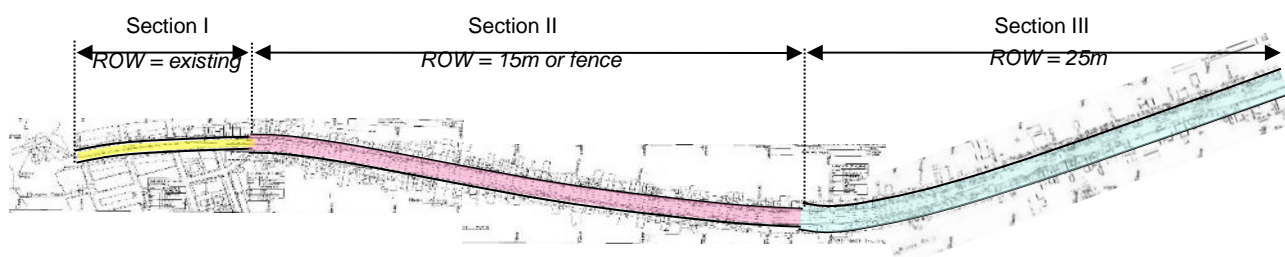


Figure 1.3 ROW declared by Municipality of Phnom Penh

National Road No.1 Project assisted by Japanese Government respect the MPP's declaration and consider entitlement matrix for land as Table 2-3.

Table 1.3 Compensation Policy for National Road No.1

Section	Width	Compensation	
		Properties	Land
Section I	existing road width - 25m	○	○
Section II	existing road width - 15m	○	○
	15m - 25m	○	○
Section III	0m - 25m	○	×
Other section	Different in each section	○	×

1.2.5 ROW for newly planned alignment

For the new alignment, such as bypass, access road to the bridge, and etc., projects only required minimum area for land purchasing. Therefore, ROW of new alignment is almost same as actual border between road pavement or end of structures and private land area. It is required to make clear the ROW line for these kinds of new alignment section for avoiding any misunderstandings of borders between public and private.

Chapter 2 ROW Management Analysis

This Chapter shows an output of the following activity based on Output 1 of the Project.

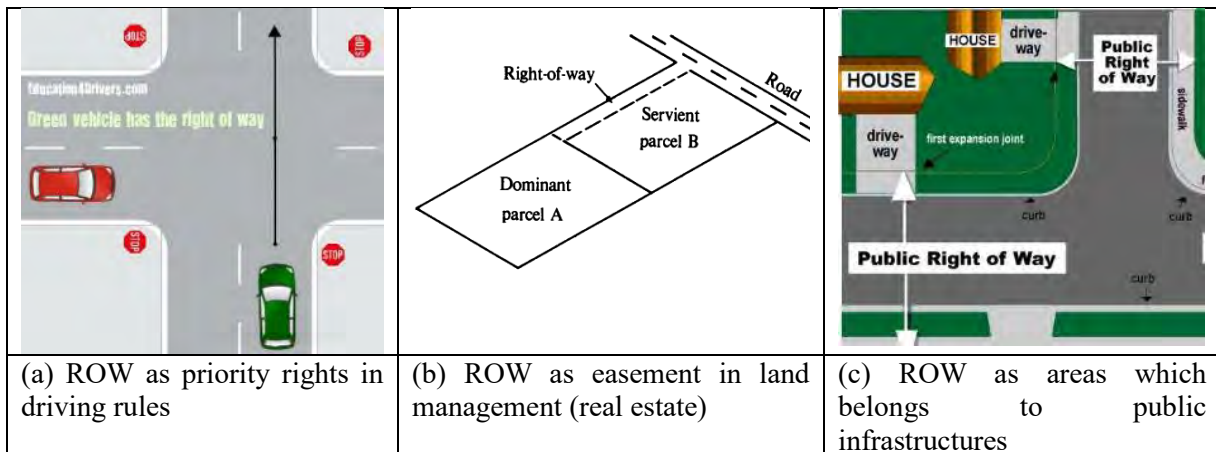
Output 1
Implementation framework for the project is strengthened based on past experiences and present situation on ESC and ROW management
Activity
1.2 Collect and analyze information on land management framework of land management system in Cambodia
Objectively Verifiable Indicator
1.2 Based on the land management framework in Cambodia and other countries, lessons learned from past experiences on ROW management are organized and current issues are analyzed

This Chapter is described in terms of EIA and EMP Process, but not including resettlement issues, based on relevant documents and information collected in Cambodia.

2.1 Definition of ROW

2.1.1 Literal meaning

The word "Right of Way (ROW)" has complicated meaning in different situations, however, the usage of the word ROW might be classified into mainly three cases described as in Figure 2.1.



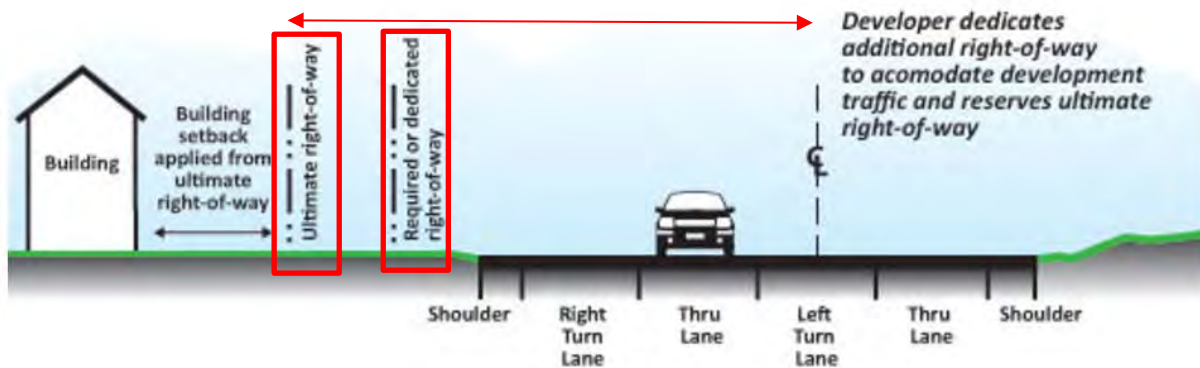
Reference: (a) <http://linkdescargargratis.tk>, (b) www.jackscamp.com, (c) http://www.urbanillinois.us/ROW_Permits

Figure 2.1 Different meanings of ROW

ROW used in many relevant legal documents of Cambodia, such as Land Law, Sub-Decree on ROW management, might be belonging to case (c) in above figures.

2.1.2 "ROW as existing boundary" or "ROW as future expansion plan"

ROW in terms of public infrastructure (the case (c) in above figures) has further classification of meanings in different situations. One is the boundary line (area) between infrastructure and public land, and another is the area belonging to infrastructure itself even the land is vacant without any facilities, such as pavement, slope, pedestrian, etc. In a case of Chester County, US, ROW is defined as a border between existing road edge with buffer area and the setback line for the future expansion is defined as "Ultimate ROW" describe in Figure 2.2.



Reference: <http://www.landscapes2.org>

Figure 2.2 ROW and Ultimate ROW

2.2 Legal Basis of ROW in Cambodia

2.2.1 Legal framework

Relevant legal documents on ROW in Cambodia with selected key articles are shown in Annex 1.

(1) Key points

- ✓ ROW is defined as one of the components of road infrastructure (Annex of Road Law)
- ✓ ROW called roadway reserved (e.g. Article 19 of Land Law)
- ✓ ROW is state property (Article 7, Sub-Decree of ROW)
- ✓ Land use within ROW with official permission forms are developed (Circular 007 and its forms)

(2) Issues

- ✓ Difference between populous area (urban), where the ROW should be set separately from existing legal framework, and other areas.
- ✓ ROW was defined in Prakas 06 in 1999 and land ownership rights existed before the Prakas is unclear in some cases.
- ✓ ROW of new alignment, such as approach road of Tsubasa Bridge, bypass etc., is unclear

Table 2.1 shows ROW related articles in relevant legal documents in Cambodia.

Table 2.1 Legal basis of ROW in Cambodia

Year	Legal Document	Signer	Major contents related to ROW
1992 13OCT	Land Law	Prime Minister	Article 1: All the land in Cambodia belongs to the State and shall be governed and protected in agreement by the State. The State does not recognize the land property right existing before 1979... Article 5: Private right is not given <u>in land reserved for roads construction and road maintenance...</u> Article 217: ... national roads ... can never be considered as a land lot, but are <u>all considered as public property</u>
1993 21SEP	Constitution	Prime Minister	Article 44: ... Only Khmer legal entities and citizens of <u>Khmer nationality shall have the right to own land.</u>
1999 27SEP	No. 06 Prakas on the measurement of illegal	Prime Minister	1. <u>Not allow to possess an owner right of the government land such as ... main national road right of way and ...</u> 8. Designate the right of way for the road...

	occupant of land		<ul style="list-style-type: none"> - National Road (NR) with one digit number like NR 2,3,6,7 the ROW is 25 meters both sides from the centerline, except NR 1,4,5 the ROW is 30 meters from the centerline. - National Road with two digit numbers like NR 11,22,64,78 the ROW is 25 meters from the centerline. - Provincial Road is 20 meters from the centerline. - Communal Road is 15 meters from the centerline.
2000 06APR	No. 961 Letter on Regarding the Implementation of Right of Way policy on National Roads, Provincial Roads, Communal Roads, and Railways in Cambodia	MEF Minister	<p>MEF issued the letter to Governors of Phnom Penh City and other provinces to disseminate area of ROW regulated by No.06 Prakas (1999).</p> <p>To implement Prakas No. 06 Pr. K with high effectiveness, the Ministry of Economy and Finance would like to inform that the Government will not use National Budget to compensate for all the things on the ROW of Roads and Railways.</p>
2001 30AUG revised in 2011 due to Civil Code	Land Law [NS/RKM/0801/14]	King, Prime Minister	<p>Article 15: Any property that is made available, either in its natural state or after development, for public use, such as <u>roads</u>, tracks, oxcart ways, pathways, gardens and public parks, and reserved land;</p> <p>Article 19: ... The penalties shall be doubled where any acquisition of land from the public properties causes damage or delay to works undertaken in the general interest, in particular any acquisition of <u>roadway reserves (=ROW)</u>...</p> <p>Article 148 (Lawful cases): Land demarcation and ownership of property situated along public roads shall be determined by the competent authorities based on actual needs of common interests, especially based on the traffic needs...</p>
2007 (26 FEB)	No.02.SR Sarachor on Illegal State Land Occupation	Prime Minister	Administrative measures for illegal occupation on state land
2009 (23 Nov)	Sub Decree on Right of Way of National Road Channels and Railroads of the Kingdom of Cambodia [No.197 S.E]	Prime Minister	<p>Article 3: The scope of the Sub decree covers any <u>national roads with 1 (one) digit and 2 (two) digits</u> and railroads in the Kingdom of Cambodia...</p> <p>Article 7: ROWs on national roads and railroads are the state properties in compliance with article 15 of the land law.</p> <p>Article 8: ROWs shall be determined to serve physical infrastructure development as follows:</p> <ul style="list-style-type: none"> - National road grade 1: Symbolized by a number with 1 (one) digit for the ROW located 30 (thirty) meters from both sides of the road;

			<p>- National road grade 2: Symbolized by a number with 2 (two) digits for the ROW located 25 (twenty-five) meters from both sides of the road.</p> <p>ROWs on the above 2 (two) kinds of national roads which cross the capital or city of a province or an urban area will be determined separately on the ROWs on national roads of the capital and city of a province or an urban area.</p> <p>Article 10: <u>The determination of the above ROWs shall be undertaken only once and remain the same in spite of further road development.</u></p> <p>Article 11: All line competent ministries-institutions shall not authorize any construction or cultivation along the ROWs on national roads and railroads...</p> <p>Article 12: The Ministry of Public Work and Transports shall issue a Prakas or a notification to determine the use of the ROWs on national roads and railroads to serve the public and private interest such as burying optical cable network, pure water pipe, setting up electrical poles, optical poles, and billboard pole, and other uses related to national roads and railroads. <u>The Ministry of Public Work and Transports shall conduct a study to display the illustration board on the determination of the ROWs on national roads and railroads instead of setting up ROW poles.</u></p> <p>Article 13: The state shall pay the compensation in compliance with the policy of new resettlement and in accordance with article 148 of the law on land management to the lawful owner of the land which is <u>re-determined as stipulated in article 8 and 9 of the Sub decree</u> for physical infrastructure development more than the determination prior to the Sub decree as well as in accordance with the law and regulations in force.</p>
2010 (31 MAY)	No.03 SR. SARACHOR (Circular) on Solutions for Temporary Constructions/Buil dings on Illegally Encroached State Land in Capital, Cities/Municipalitie s and Urban Areas	Prime Minister	<p>2-Identification, Mapping and Classification of the location of temporary constructions/buildings:</p> <p>After recording the numbers of locations of temporary constructions, state land working groups at cities and districts/Khan level, working groups at communes/Sangkat level, community representatives of local people and civil societies must hold a joint meeting and discuss on the accuracy of each location in order to input those locations into commune map which has big scale. State land working groups at cities and districts/Khan level, community representatives of</p>

			<p>local people, civil societies must identify each location based on the physical/real condition as below: ...</p> <ul style="list-style-type: none"> • Dangerous/harmful locations to residential people such as locations near dumping areas, on the road shoulder, near sewage, on the <u>Right of Way (ROW)</u>, on railways, on flood dams, on embankment of rivers and streams, and on the terrace, etc. <p>Locations of temporary constructions/buildings on the map must be marked by different technical colors or symbols based on the physical conditions as mentioned above. Importantly, that map must be recognized or approved by the thumbprints of state land working groups at cities and districts/Khan level, community representatives of local people, and civil societies. Besides using this map as solution discussion, authorizes should publicize it to local people in order to avoid any illegal state land encroachment in future...</p>
2014 (4 MAY)	Road Law [NS/RKM/0514/00 8]	Prime Minister	<p>Article 12: <u>Any construction on the land for road construction development, in particularly area for right of way which is permanently established shall be prohibited</u>, except for the construction in some special projects such as of the equipment used in the national defense, security and in road management or road construction and construction for other public services which require the approval of the Royal Government in accordance with request of the competent authorities of road management. Right of way may be utilized for various temporary purposes without affecting the equipment and structures for safe road traffic.</p> <p>Article 14: In the construction of new roads, right of way and land for construction of important road infrastructures shall be set aside. Nonetheless, the construction of roads within towns, boreys (residential communities) and new development areas shall include the construction of roads for pedestrians, the handicapped and construction of other road infrastructures to assure safe traffic. The earmarked (reserved) right of way and land for construction of road infrastructures above shall be publicized and the draft plan for such right's right of way and land for construction of those road infrastructures shall be put forward to the Ministry of Land Management, Urban Planning and Construction and the Ministry of Interior to cooperate in launching appropriate measures.</p> <p>Article 37: All competent authorities shall launch legal measures to prevent any destruction to the road infrastructures and encroachment on the right of way.</p> <p>Annex:</p> <p>14- ROAD INFRASTRUCTURE referred to right of way, road construction, vehicle terminal, vehicle parking yard, parking lots, roadside service station and rest area.</p> <p>15- RIGHT OF WAY referred to land strips along both</p>

			sides of the middle point of road included seized of right of way, reserving for the management, developing and protection road to ensure traffic safety and used for another road infrastructure affair which determined in linear of right of way. 16- LINEAR OF RIGHT OF WAY referred to linear of right of way boundary that have distance limited from the middle point of road.
	No 007 SR SK Sarachor on Management and ROW Use Strengthening Measures (National and Provincial Roads)	MPWT Minister	Sarachor strengthens implementation of past Law, Sub Decree and related document for protection from illegal occupation and clarifies procedures for applying use of ROW. The Sarachor has separated forms.

2.2.2 Necessary legal/administrative pre-conditions regarding ROW management

ROW management system may not be completed by single system but with relevant legal and administrative systems described as below;

- (1) Land registration: Not yet completed (Land Law and its relevant legal documents)
- (2) Construction standard: Construction restriction from public road, etc. (Article 30, Sub-Decree No.86 on Construction Permit)
- (3) Land use plan: Not existed
- (4) Family register and management of illegal encroachment: Not perfect

2.2.3 Stopgap between legal definition and practical situation

ROW in Cambodia may stand for two different understandings in different background;

- (1) ROW as Road Plan: **reserving for future road construction (Future Plan** with permission of existing land use and restriction for construction) ---> Practical Situation in Cambodia
- (2) ROW as Road Area: constitutes **a part of road infrastructure (State Land** where any private land use and existing structures shall be cleared) ---> Legal Definition in Cambodia



(1) ROW as Road Plan in the future

(2) ROW as State Land

*red areas stand for practically managed land by authorities concerned as state property

Figure 2.3 Different Understandings of ROW

In case (1) of above figure, the area next to existing road in both side are the target of future clearance. In case (2), originally all width of ROW was belonging to national property and shall be protected new encroachment by continuous ROW management.

In Cambodia, understandings (1) and (2) in above figures had been mixed together for compromising actual situation and legal definition of ROW with unclear historical declaration process of ROW. Table 2.2 shows mixed elements of ROW in practical management.

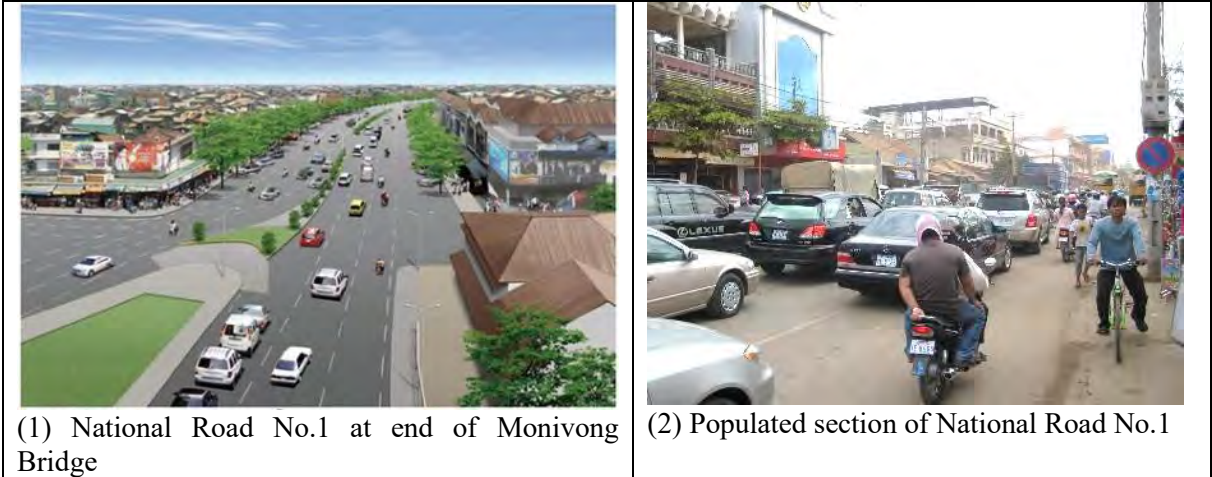
Table 2.2 Mixed elements of ROW in practice

ROW as Future Plan	ROW as State Land
<ul style="list-style-type: none"> • Private land use and permanent structures within ROW is not eliminated by administrative measures in practice (except Resettlement Phase). • Setback line due to resettlement is not ROW but Corridor of Impact (COI) which is set within ROW. Project Affected Households are not requested to setback beyond ROW. 	<ul style="list-style-type: none"> • No compensation is given for land within ROW when the land is acquired. • ROW post have been put in the field.

2.3 Present Status of ROW in Cambodia

2.3.1 Urban (Populous) Area

ROW running through populous urban area is determined separately from existing legal documents such as Sub Decree on ROW Management. In case of the section of National Road No. 1 next to Monivong Bridge, once Phnom Penh City issued declaration which specified ROW of the section as present road edge (end of physical road structure). The image is shown in (1) of Figure 3.1 below. Populate area such as Provincial capital, town with local market, etc., are practically difficult to comply with fixed single ROW, such as 30 m distance from existing centerline (see (2) in the following figure).



Reference: JICA Report of Notional Road No. 1

Figure 2.4 Different Understandings of ROW

2.3.2 Road as dyke

Due to geographical conditions of Cambodia, some trunk roads have multi-function as dyke as flood prevention infrastructure. Some sections of National Road No. 1, No. 6, No. 8 have typical cross-section of pavement on land filling basement described as Figure 3.2.



Figure 2.5 Different Understandings of ROW

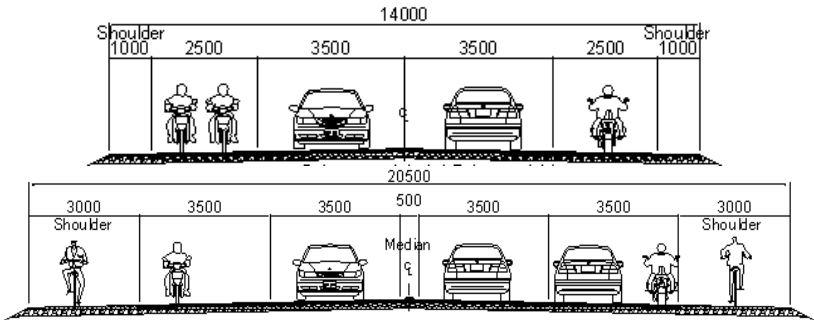
In such road sections, houses along the road have flood free structure of high-raised floor (see (1) of following figures) and people tend to come back to road edge for better living conditions and business opportunity (see (2) of following figures).



Figure 2.6 Typical dyke road

2.3.3 Road in flat land

Road in flat land does not require long slope, therefore, minimum width of existing road is not so wide described as Figure 3.2.



Reference: JICA Report of Notional Road No. 5

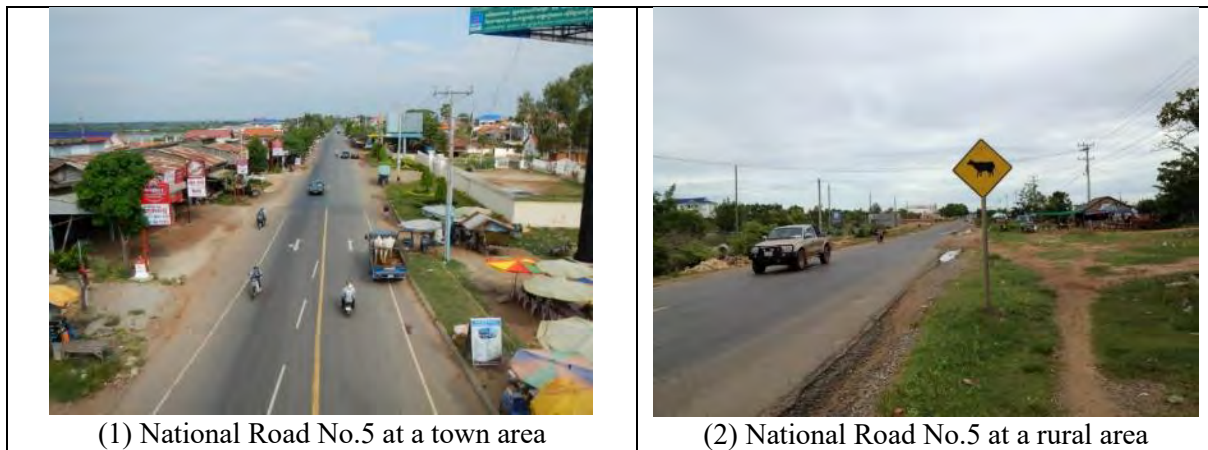
Figure 2.7 Typical road cross-sections

For example, ROW of 60 m can theoretically accommodate more than 4 vehicle lanes in flat land in case that road alignment is straight. Furthermore, the highest standard of Asian Highway, Primary classification, is defined with ROW of 50 m (see Table 2.3).

Table 2.3 Asian Highway Standard

Highway classification		Primary (4 or more lanes)				Class I (4 or more lanes)				Class II (2 lanes)				Class III (2 lanes)			
Terrain classification		L	R	M	S	L	R	M	S	L	R	M	S	L	R	M	S
Design speed (km/h)		120	100	80	60	100	80	60		80	60	50	40	60	50	40	30
Width (m)	Right of way	50				40				40				30(40)			
	Lane	3.75				3.50				3.50				3.00(3.25)			
	Shoulder	3.00		2.50		3.00		2.50		2.50		2.00		1.5(2.0)		1.0(1.5)	
	Median strip	4.00		3.00		3.00		2.50		N/A		N/A		N/A		N/A	
Min. horizontal curve (m)		520	350	210	115	350	210	115		210	115	80	50	115	80	50	30
Pavement slope (%)		2				2				2				2 - 5			
Shoulder slope (%)		3 - 6				3 - 6				3 - 6				3 - 6			
Type of pavement		Asphalt/cement concrete				Asphalt/cement concrete				Asphalt/cement concrete				Dbl. bituminous treatment			
Max. superelevation (%)		10				10				10				10			
Max. vertical grade (%)		4	5	6	7	4	5	6	7	4	5	6	7	4	5	6	7
Structure loading (minimum)		HS20-44				HS20-44				HS20-44				HS20-44			

Figure 3.5 shows examples of National Road No. 5 running through flat lowland area.



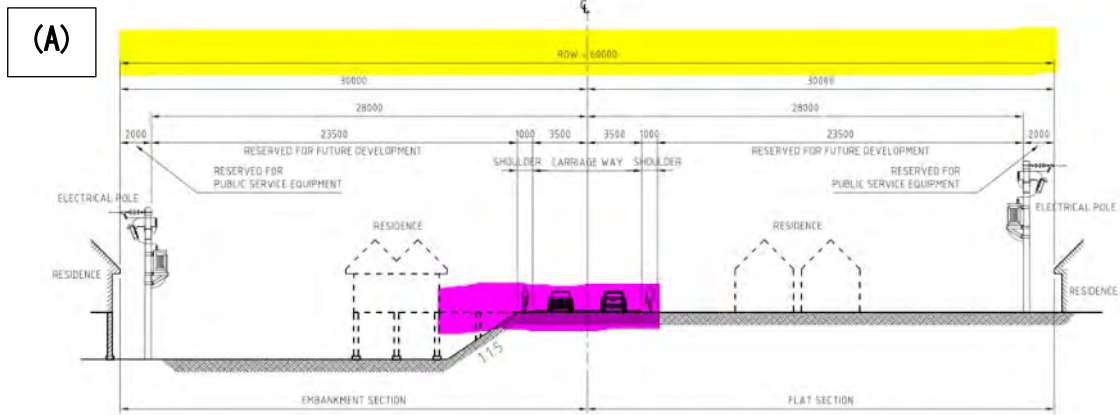
(1) National Road No.5 at a town area

(2) National Road No.5 at a rural area

Figure 2.8 Typical road in flat land

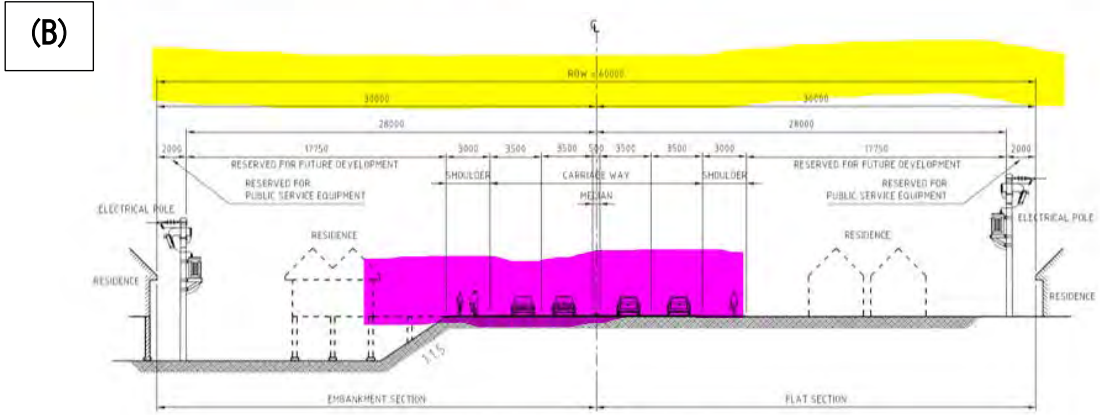
2.3.4 Image of ROW with existing and planned road

Figure 3.6 shows several cross-sections with ROW. Most of the 1-Digit National Road is two lanes with relatively narrow width of pavement and/or road structure ((A) of Figure 3.6). Some National Roads, such as NR-5 will be extended to 4 lanes as described (B) of Figure 3.6. If a National Road is developed with more than 4 lanes with service roads, road width will be same as ROW length of 60 m, although required road width depends on shape of alignment.



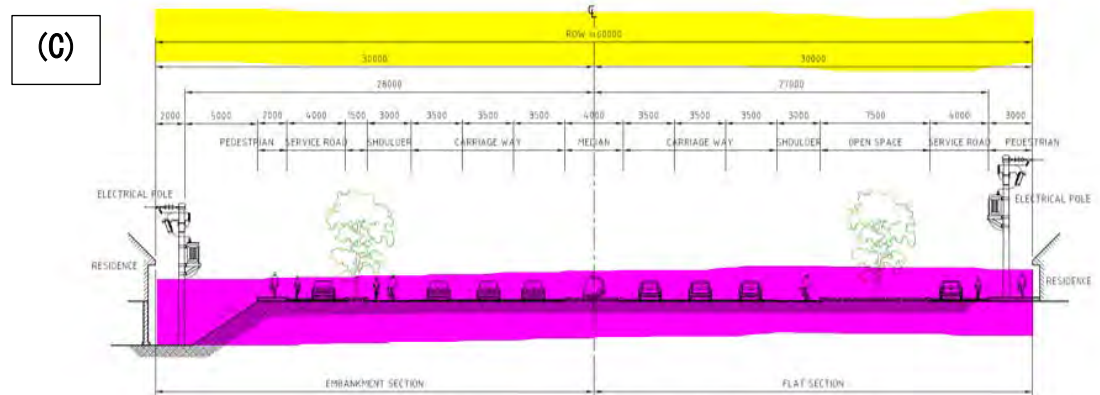
TYPICAL CROSS SECTION - NATIONAL ROAD ONE DIGIT (2 LANES)

SCALE 1:250



TYPICAL CROSS SECTION - NATIONAL ROAD ONE DIGIT (4 LANES)

SCALE 1:250



TYPICAL CROSS SECTION - NATIONAL ROAD ONE DIGIT (FULL SERVICE - 6 LANES + SERVICE ROAD)

SCALE 1:250

Figure 2.9 Image of ROW and road cross-section

2.4 ROW Management Guidelines (RMG)

2.4.1 Development Plan of draft RMG

ROW running through populous urban area is determined separately from existing legal documents



Figure 2.10 Timeline of development of RMG

Chapter 3 Institutional Analysis

This Chapter shows an output of the following activity based on Output 1 of the Project.

Output 1
Implementation framework for the project is strengthened based on past experiences and present situation on ESC and ROW management
Activity
1.3 Conduct institutional framework analysis for MPWT
Objectively Verifiable Indicator
1.3 Institutional framework and responsibilities in MPWT are examined

3.1 Institutional responsibilities beyond MPWT

Because ROW management is cross-cutting issue, MPWT requires coordination and corroboration with relevant authorities. In addition, several activities which play important role for ROW management are not responsibility of MPWT. For example, land management belongs to Ministry of Lana Management, Urban Planning and Construction (MLMUPC) while local authorities take responsibility of administrative implementation in order to prevent illegal encroachment.

Figure 3.1 and Figure 3.2 shows institutional relations and their scope of responsibilities.

Chart: ROW Management and Target Area of CESCO_R (excluding activities on EIA and EMP)

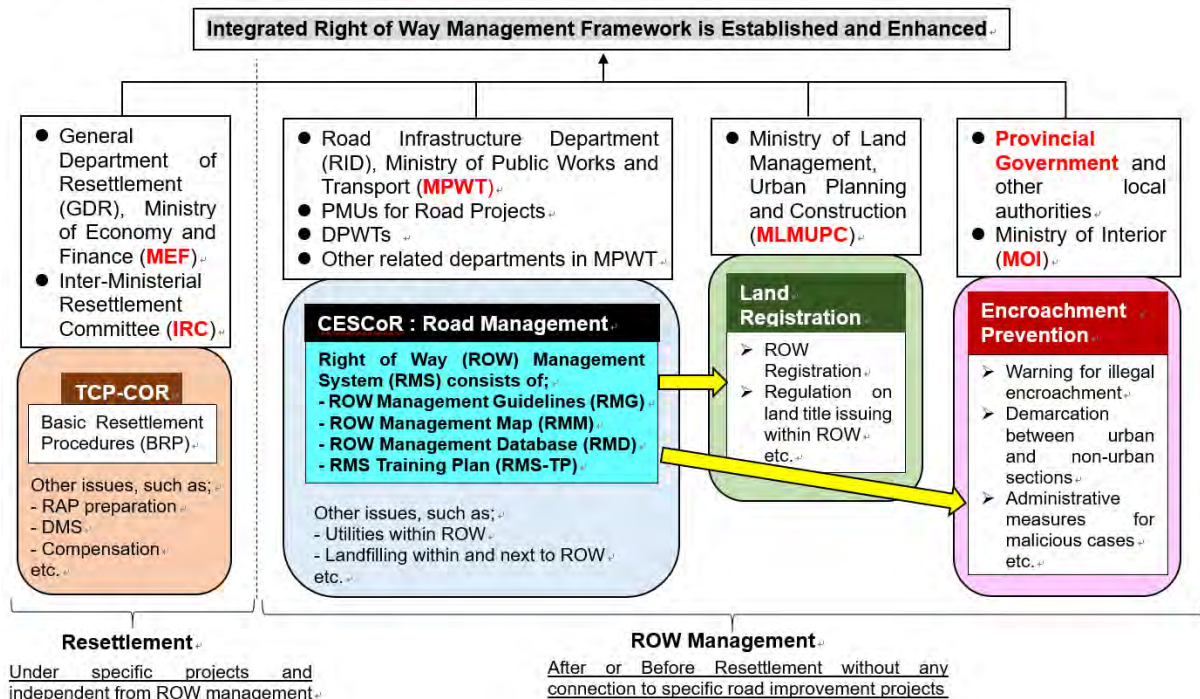


Figure 3.1 Relevant Authorities for ROW Management

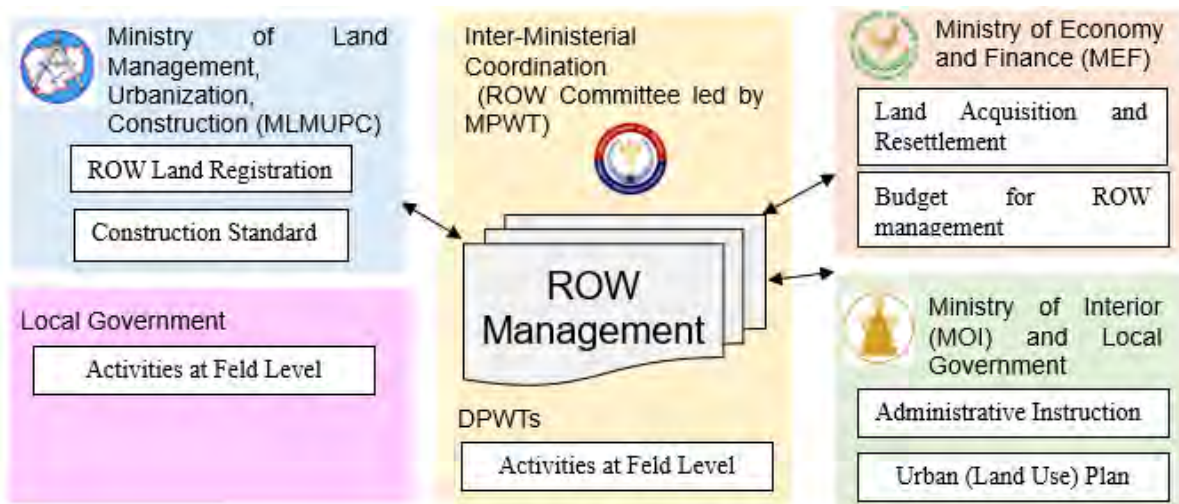


Figure 3.2 Image of Cooperation among ROW Related Authorities

Chapter 4 Recommendation for ROW Use in the Future

This Chapter shows an output of the following activity based on Output 1 of the Project.

Output 1
Implementation framework for the project is strengthened based on past experiences and present situation on ESC and ROW management
Activity
1.1 Analyze past projects, current tackling issues on EIA/EMP and ROW management in terms of ESC-GL
Objectively Verifiable Indicator
1.1 Based on the JICA Guidelines for Environmental and Social Considerations (ESC-GL), lessons learned from past experiences are organized and current issues on ESC and ROW

4.1 Procedures for ROW Usage

4.1.1 Infrastructure Development within ROW area

The ROW area is a state-owned land and is a public property of all the people, so the rules concerning the road area must be observed and used effectively. Local residents are subject to comply with the following matters. In addition, DPWT shall consider the following matters and manage the safety and maintenance of the ROW areas and provisional infrastructure development.

- Compliance matters
 - A) Local residents shall not change the form and nature of land without permission.
 - B) Local residents shall not block waterways in front of houses or premises. If a passage needs to be developed across the waterway, the applicant shall consult with the DPWT office and take appropriate measures.
 - C) DPWT shall, as necessary, make efforts to improve ROW area, when rainwater flows into the residential land from the ROW area, or when large water pools on rough grounds cause a significant disturbance to the lives of local residents. Such improvement measures include U-shaped ditches and backfill with crushed stones or soil.
 - D) Entrance passages for large-scale premises such as corporate offices, warehouses, cafeterias, GSs, factories, schools, temples, hospitals need to be developed with heavy asphalt or concrete. Temporary use permission needs to be issued after detailed discussions on the purpose of use, passing vehicle types, traffic volume. In case public facilities wish to use, a signboard may need to be installed for an indication which requires also a permission.

Table 4.1 Compliance Matters Regarding Activities within ROW

Items	Residents/Users	DPWT/MPWT	Remarks
Change of forms and nature of land	Principally residents cannot change land forms and natures without permission. Residents can submit application to DPWT for temporal uses with certain reasons.	DPWT issues temporal permission based on application from residents and monitor their activities.	Land next to ROW area should be regulated by construction permits in order to avoid negative impact to roads, e.g. landfilling
Waterways	Residents cannot change or damage waterways without permission. Residents can submit application to DPWT for temporal uses with certain reasons.	DPWT issues temporal permission based on application from residents and monitor their activities.	
Large-scale corporation, factory, warehouse, Gus Station, restaurant, hospital, school and so on	All activities within ROW area shall be applied and permitted by responsible authorities before construction.	After receiving an application, DPWT instructs numbers, sizes, and structures of entrance gates for such large-scale buildings based on traffic volume, types and weight of passing vehicles.	Necessary facilities are principally prepared by owner's expense.

4.1.2 Public Utilities within ROW Areas

In this section, the use of public facilities in the ROW area is explained.

(1) Possible Public Facilities within ROW Area

Table 4.2 Examples of Public Facilities within ROW

Major Items	Facilities, Purpose	Remarks
Essential utilities	Water supply Sewage/drainage Power supply (pole, cable, wires, steel tower) Communication cables	• Facilities will be switched to (semi) permanent permission, when the national road is fully developed according to the plan.
Temporary use for public purposes by provinces and municipalities	Construction material storage yard for public institutions Temporary buildings	• Water pipes, sewage culvert construction materials, gravel, sand, etc. • Temporary office, removable toilet.
Temporary use for general construction by state, province and districts	Temporary parking lot for vehicles and motorbike during government building renovation Materials, temporary storage for documents, construction yard, public hall renovation	Other ministries and agencies other than MPWT, regional offices, may temporarily use for a limited time period, if unavoidable circumstances arise.
Other use for local residents	Temporary green area, flower bed, bench, public restroom, bus stop lane, disaster prevention storage	Temporary public facilities can be developed, provided that the conditions are restored promptly when national road construction gets started.

(2) Temporary Use by Public Utilities

In case no suitable land is available in the vicinity for public utilities, the private land must be used for a fee. Temporary use of state land for a public purpose is a public interest as this leads to cost reduction of costs, in other words, reduction of tax burden. Therefore, the use for a public purpose is commonly free of charge.

(3) Temporary Use by Other Government Offices

Not only MPWT and road related authorities but also other ministries and government offices may make use of ROW areas. In principle, the management of land during its use falls under the responsibility of the offices that uses the land.

The purpose of use, period and other details shall clearly be posted at the point of use so as not to cause suspicions from local residents. The area shall be fenced, or the entrance locked as safety measures. During the time of use, DPWT does not need to manage the area. This will reduce the workload of DPWT.

(4) Temporary Use Special Case and Points to be Noted (Private utilities/facilities in ROW)

The following are special temporary use cases that can be considered other than the cases described in the previous sections. The features and points to note are below.

1) Communication cable facilities of private Internet company

The cables and related facilities for communication network will be an important factor for the economic development of the whole country in the future. The communication cables will be infrastructure as important as the electric wires along the national roads. However, the main providers of such services are private and profit companies. The temporary use of ROW areas shall be therefore for a fee. Furthermore, when national road widening construction is commenced, its temporary use does not end, but shall be switched to a permanent payable use of road area as either overhead wire or underground buried cables.

2) Large advertising billboards and signboards for private companies with lighting equipment

Advertising billboards that are larger than those for ordinary stores or offices are often equipped with an electrically movable apparatus or a lightning system. The administrative bodies to issue a permission for use are not uniformly coordinated.

The timeframe for use shall be stated in the permission and prior to a permission, structures of installation, safety and preventive measures against collapse need to be checked as well as wiring conditions of the electric wires and apparatus.

Safety of the existing road is the priority. For future national road widening works, the records and survey documents shall be stored so that at the commencement of road widening works, the owners of billboards can easily be identified to notify its removal.

4.2 Methods of Soft Approach

4.2.1 Reference: Temporary use special case "Sales stalls for local products"

Sales stalls on the streets are simple commerce forms widely practiced in many areas, such as selling vegetables harvested in the morning on the day. They have also been occupying an ideal place for sale since long ago along the national road. Such places are typically highly unsafe roads sides without guardrails, and thus the risk of traffic accidents is very high.

Rather than eliminating such unauthorized street vendors, it would be also an idea to develop a safer mini market for smaller group units and temporary parking space for vehicles until the commencement of construction works. A concern may remain when they may wish to use the land for their business after the completion of the road, but such market developments can be an opportunity for the local residents to learn the meaning and a proper management of ROW area.

4.2.2 Temporary Use Permission of ROW

The ROW areas of national roads need to be centrally coordinated and developed. The office of ROW Management was set up in RID as a new office to administrate the management of ROW. Development of road construction has a timeline of 1) before, 2) during construction and 3) after development completion. MPWT shall take different types of actions at different stages of road development with respective focuses along the timeline. The focus timeline of ROW management is 1) before a road widening.

Use permissions for road related areas are generally classified into temporary use permission and permanent road use permission. The RMG guidelines explain about the temporary use permissions in the undeveloped ROW area. A temporary use permission shall end once the road widening works begin. However, public utilities notably such as electricity poles, water pipes and the like are switched to a permanent road use permission at a later stage if they continue to use the land within the road area after the road widening is completed to a full scale. Road data should be compiled in the road management database of MPWT and road ledger of DPWT in each responsible district.

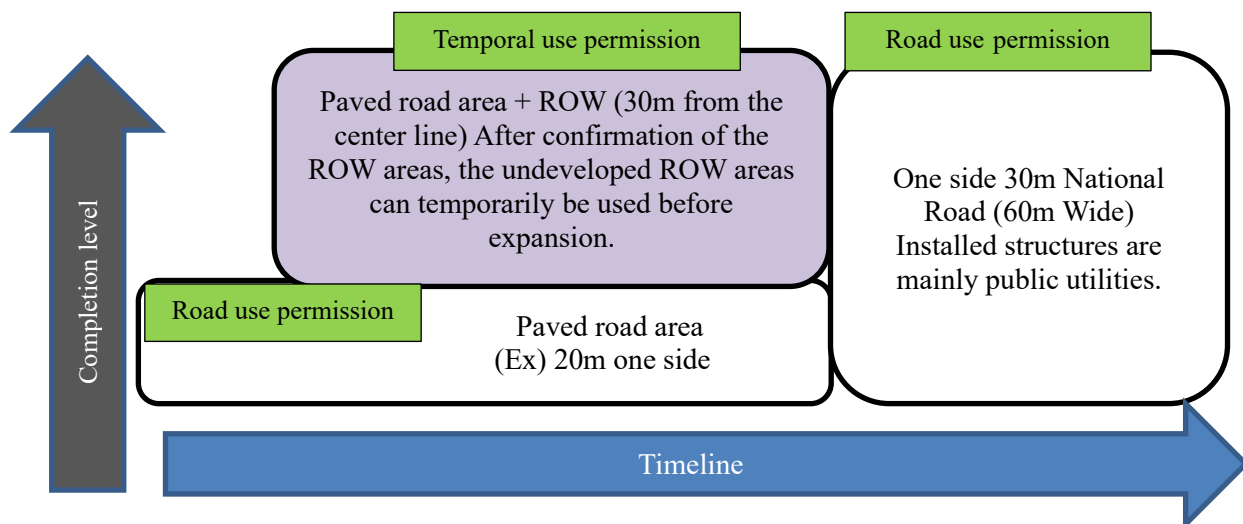


Figure 4.1 Temporal use and Road use permission

(1) Target area

The guidelines on temporary use permission are applied to the ROW area where widening works have not yet started, in other words, undeveloped ROW areas.

Temporary use in completed and used roads are matter of road use and is not covered by these guidelines.

(2) Permit authority

DPWTs manage the national roads including ROW areas. Applicants submit applications

for temporal use to DPWT in the respective districts. When MPWT consigns the road maintenance management to a province, municipality or city, the application can be submitted to the respective offices at the provincial, municipal or city authorities.

(3) Data management of temporary permission

DPWTs manage and update the ROW temporary use permission list for the national roads under jurisdiction. DPWT shall patrol the national roads for maintenance and control of illegal encroachments and update the ROW management database and the road ledger.

(4) Use permission for a fee and use permission for free

The reasons for the fee or free of charge are as follows:

- **Why with fees?**

Acquisition, maintenance, construction and management of ROW are carried out at the expense of the residents.

Fairness is a purpose to charge fees for use to those who profit from the use of the public land within ROW. As this also increases management costs of public property, the

management cost shall be partially shared by such users. In other words, part of the benefits received by users are repaid.

▪ Why without fees?

While national roads are not expanded, house constructions and economic activities are restricted outside the undeveloped ROW. This inconveniences the daily activities of residents.

Theoretically, a public administration must immediately proceed with development of ROW areas for example by constructing temporal community roads or drainage facilities and so forth. The residents endure inconveniences due to a delay of such governmental undertakings. Therefore, a permission must be granted for residential passages.

Table 4.3 Temporary use permission examples with and without fees

Temporary use with fees	Temporary use without fees
<ul style="list-style-type: none"> - Large space in front of shops - Larger space in front of large premises such as factories, warehouse, GS for large vehicles - Commercial advertising billboards and information billboards - Short-term use for festivals, events, etc. by private companies - Cable and pole installation by private internet company etc. 	<ul style="list-style-type: none"> - Passage to residential houses (maximum 3 m wide) - Construction yard for residential houses - Crops and orchards fields in rural areas - Temporal use for storage or construction yard by public institutions - Use for public infrastructure facilities (electric poles, wires, steel towers for high-voltage electric wires, gas water and sewage, communication cables, crossing waterways, drainage) etc.

(5) Permission for Temporary Land Use within ROW

In principal, MPWT must prohibit to use and rent land within ROW. However, MPWT can provide a permission for temporary land use with fee to Land owner who is neighboring with ROW. In case the land owner has submitted application for temporary land use and when there is an unavoidable situation.

However, the following cases can be provided a permission for temporary land use without fee.

- 1) The land owner, who set back and reconstructed the house to outside of ROW, uses temporary access road from Existing National Road.
- 2) Temporary construction yard for residential houses.
- 3) In case, Director of DPWT accepts for project progress and public benefit as unavoidable case. In addition, when the director of DPWT office provides a permission for temporary land use, the certificate of temporary land use permission should be issued.

(6) Permission conditions

The general conditions of the temporary ROW use permit are as follows:

- 1) Do not use the land for any other purposes than permitted or set up a building or solid structure. Changes of the permitted items need a prior application and to follow a proper procedure.
- 2) Do not transfer or lend permissions of use to other parties.
- 3) Land user who may cause damages to or receive complaints from a third party resulting from the use of the land, shall solve problems at their own cost.
- 4) Land users shall cooperate with the authorities if the authorities need to enter the ROW area during the period of use when required.
- 5) When the land user intends to terminate the land use due to the expiration of the period of use or an accident, s/he shall notify the authorities in advance and restore the land to the original condition at their own expense according to the instruction.
- 6) If the land user does not hand over the area of use after one week as of one day after the expiration of the use period, no objection is accepted even if the authorities claim a compulsory enforcement. The costs required for this shall be borne by the land user.

◆ Special Provisions

The following permission conditions can be attached as special provisions tailored to various field conditions.

- 1) Land user shall not have any objection to change the place of use or the use is discontinued even during the temporary use period due to the urgent construction of the authorities.
- 2) Land user shall be compelled to claim the property right for a temporal structure that the land user erected for use.
- 3) Land users shall not make claims of the property rights of the harvested trees, cultivation rights, agricultural profits, etc. after the end of use of the fields and orchards.

(7) Temporal Use Fee

DPWT collects 2% of property tax value per square meter multiplying the square meters of the land for an annual temporal use fee (example). Use of aerial space shall be calculated two thirds of the land unit price, and one third in the case of underground use. The number of new or existing advertising billboards is immense, so it is appropriate to set a unit price per board. If it is a nonstandard size, the unit price can be calculated by its size. The fee for use shall be fairly set for ROW areas.

The fee for use is a lump sum payment when a temporary use permission is issued.

If the use period is less than a year, the fee will be charged monthly.

The fee for use shall be the revenue of DPWT in each district for maintenance and

management of national roads. The task is consigned to local authorities, such as district or prefecture, the income will be the revenue of respective authorities.

※ Property tax (Property Tax or Tax on Immovable Property)

Concerned real estates are those with an evaluation value of 100 million Riel or more excluding farmlands. Use an evaluation rate of the real estate evaluation committee.

In addition, when the fixed property tax assessment rate is unknown, a method often applied is to use 2% of 70% of the standard land unit price in the concerned areas. The unit prices are reduced gradually as going away from the central areas to the suburban areas.

(8) Consultation with relevant authorities

DPWT fully consults with relevant authorities that have jurisdiction over public utilities and takes measures if necessary when the location where the land user applies are close to such facilities with facilities such as water and sewage pipes, utility poles, and electric wires.

If a signboard is installed in the upper part of the buried pipeline and around the utility pole, it will be a hindrance to maintenance. Permission cannot be issued also to the position to block the visibility of road signs and signals.

(9) Others and Administrative Disposal

If a temporary user deliberately violates the permission conditions, or change the forms and nature of the land without permission, and does not follow notices and guidance from the authorities, MPWT or DPWT shall carry out an administrative disposition and fines in accordance with the Road Act.

J3-2: Development Plan of Draft RMS

ROW Management System (RMS) Development Plan

1. Summary of the development of RMS

1.1 Purpose of Development of RMS

Right of Way (ROW) Management System (RMS) is established to achieve the following purpose;

- 1) To maintain/develop functionable road (Utilities layout, Land filling and etc.)
- 2) To prevent Illegal Encroachment in the future (Illegal Encroachment Prevention: IEP)
- 3) To conduct smooth resettlement
- 4) To register the ROW as State Land

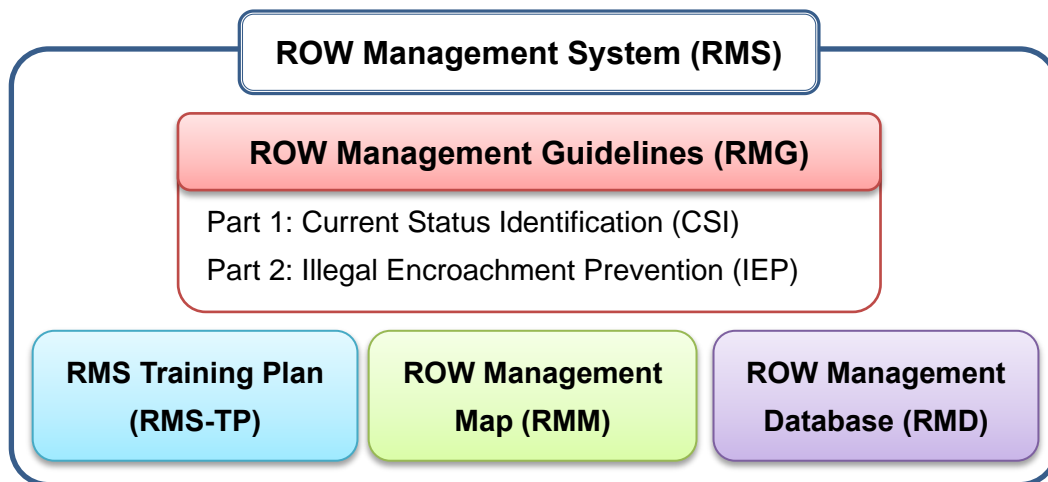
1.2 Policy of Development of RMS

In order to achieve above purpose, policy is shown as follow;

- 1) To prepare Standard Drawing
- 2) To identify the current status of encroachment (Current Status Identification: CSI)
- 3) To obtain charging usage on the land in ROW
- 4) To implement the future Project smoothly
- 5) To reduce government's expenses for resettlement

1.3 Contents of RMS

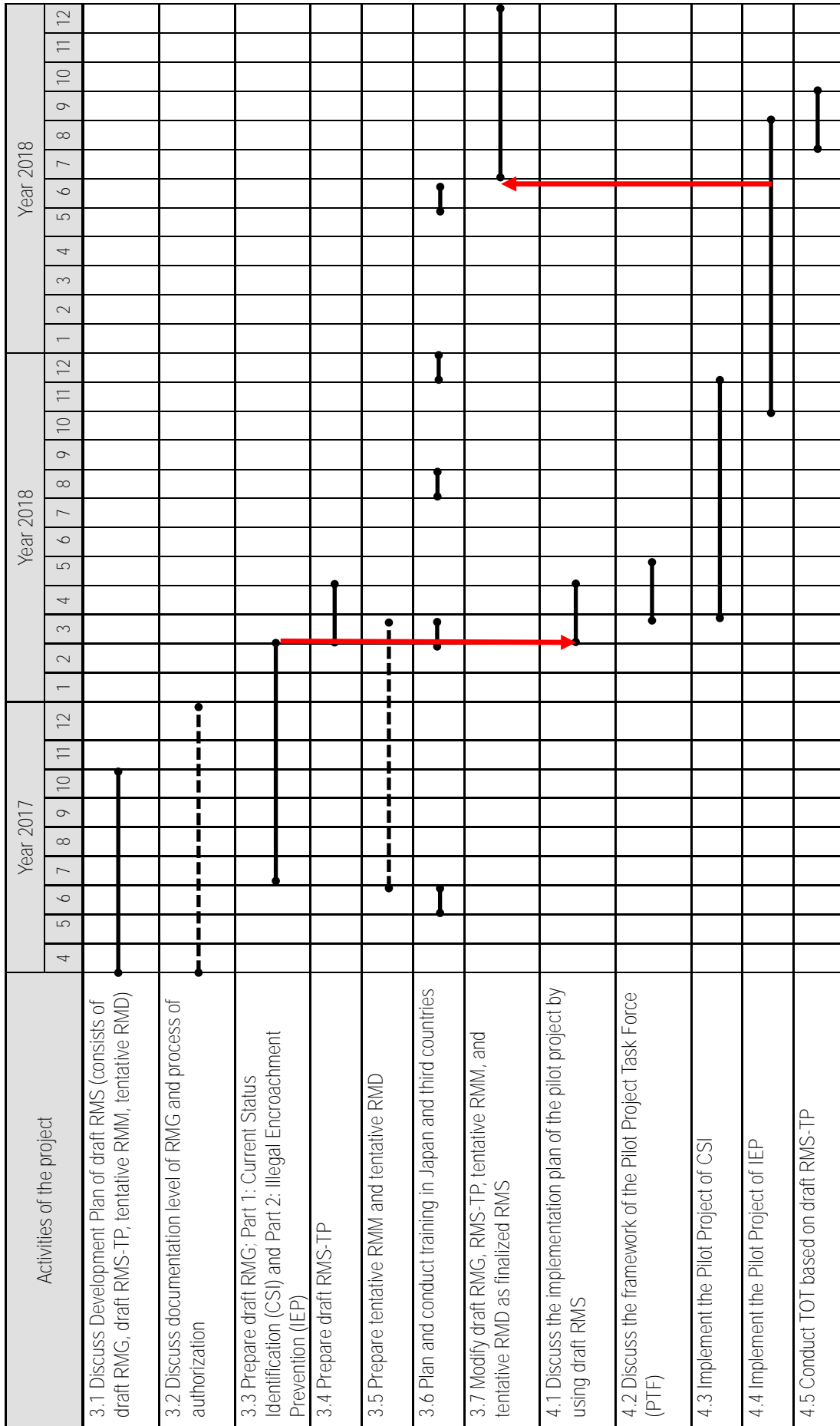
RMS consists ROW Management Guidelines (RMG) (refer to Current Status Identification (CSI) and Illegal Encroachment Prevention (IEP)), RMS Training Plan (RMS-TP), ROW Management Map (RMM) and ROW Management Database (RMD).



2. Planned Activities and Overall Schedule

In order to develop the RMS, activities of the project and overall schedule are as follow;

Planned Activities and Overall Schedule of RMS



3. Draft Table of Contents (TOC) of the RMG

Draft Table of Contents (TOC) of the RMG, which is main contents of RMS, is considered as follows to be a practical guideline and easy to understand with necessary technical knowledge/skills as the appendices. The draft TOC of the RMG will be revised through the discussions with the TF members.

Draft TOC of the RMG

Part 0: Basic Policy

- 0.1 Back Ground
- 0.2 Objective and Policy on ROW Management
- 0.3 User/Organization and Responsibilities
- 0.4 Definitions
- 0.5 Legal Basis

Part 1: Current Status Identification (CSI)

- 1.1 ROW Management Map (RMM)
 - 1.1.1 Concept of RMM
 - 1.1.2 Survey Methodology
 - 1.1.3 Mapping Methodology
 - 1.1.4 Items Observed
- 1.2 ROW Management Database (RMD)
 - 1.2.1 Concept of RMD
(Data Processing, Storing, Sharing, Managing Acquired Data)
 - 1.2.2 Database Structure
 - 1.2.3 Update Rules

Part 2: Illegal Encroachment Prevention (IEP)

- 2.1 Boundary Management
 - 2.1.1 ROW Pole Installation
 - 2.1.2 Sign Board for Boundary Demarcation
 - 2.1.3 Other Measures
- 2.2 Monitoring and Public Enlightenment
 - 2.2.1 Field Monitoring
 - 2.2.2 Warning to New Encroachment
 - 2.2.3 Dissemination
- 2.3 Registration/Permission of Application for ROW Usage
 - 2.3.1 Road Development Planning
 - 2.3.2 Land Filling within and nearby ROW
 - 2.3.3 Access to Road from Private Land
 - 2.3.4 Public Utilities/Facilities in ROW
 - 2.3.5 Private Utilities/Facilities in ROW

Part 3: Budgetary Plan

Appendices

- RMS Training Plan (RMS-TP)
- Pilot Project Report (if necessary)

J3-3: List of ROW Management Taskforce Meeting Records
RMG Authorization Process/ Draft RMS Development/ Draft RMG
Preparation/ Draft RMS- TP Preparation/ Tentative RMM Preparation/
Tentative RMD Preparation

List of Right of Way (ROW) Management TF Meeting Records

ROW TF Meetings	Objectives	Results
<p>1st ROW TF Meeting</p> <p>Date: 9th May, 2017 Place: Public Infrastructure Department (PID) Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Discuss and clarify the concept, implementation and challenges of ROW Management; and - Set up the date and agenda for the 2nd ROW TF Meeting. 	<ul style="list-style-type: none"> - Conditions, and challenges of ROW Management and illegal encroachment in Cambodia were discussed; - Sever system to store database were requested in the meeting; - Cooperation from relevant ministries for the ROW Management were discussed; - lesson learned on ROW Management from neighboring countries were discussed and considered; and - drawing of ROW and condition of utilities installation inside ROW were discussed.
<p>2nd ROW TF Meeting</p> <p>Date: 7th June, 2017 Place: Road Infrastructure Department (RID) Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Discuss the construction permit presented by official from Ministry of Land Management, Urban Planning and Construction (MLMUPC); - Set up the 3rd ROW TF Meeting; and - Conduct the Assessment for Taskforce Members. 	<ul style="list-style-type: none"> - Legal document, procedures, challenges and solution on Construction permit were presented by MLMUPC's official and discussed actively among the Taskforce Members; and - Assessment of capacity of Taskforce members were conducted.
<p>3rd ROW TF Meeting</p> <p>Date: 26th July, 2017 Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Have better understanding of "ROW Management Policy"; - Have better understanding of "Table of Contents (TOC)" on the "ROW Management Guideline (RMG)"; - Set up the 4th Taskforce meeting; and - Understand the current capacity of TF members related to ROW Management. 	<ul style="list-style-type: none"> - Procedure on the expenditure for resettlement and fee regarding ROW Usages for utilities/facilities were confirmed and discussed; - Main purposes for policy on ROW management were discussed and prioritized by TF members; - Draft of TOC of RMG were explained; - Realizing on ROW Management Map (RMM) and ROW Management Database (RMD) were discussed; and - Additional self-evaluation on ROW management was conducted.
<p>4th ROW TF Meeting</p> <p>Date: 5th September, 2017 Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Clarify "ROW Management Policy" and "Table of Contents (TOC)" on the "ROW Management Guideline (RMG)"; - Have better understanding of coordination with local authority by Kampong Speu DPWT; - Have better understanding of "Boundary between Urban and Non-Urban"; and - Set up the 5th ROW TF meeting. 	<ul style="list-style-type: none"> - "ROW Management Policy" and TOC of RMG were reviewed and confirmed again by the TF members; - Cooperation between Local authority with DPWT on ROW management were explained by Director of Kampong Speu DPWT; - Issues on illegal ROW Encroachment were also discussed; and - Boundary between Urban and Non-urban is under preparation by the Ministry of Land Management, Urban Planning and Construction (MLMUPC).

ROW TF Meetings	Objectives	Results
<p>5th ROW TF Meeting</p> <p>Date: 9th October, 2017</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Clarify the development plan for ROW Management Guideline (RMG); - Discuss the trial flight of Drone (Schedule and Flight Plan); - Have better understanding for the concept of next training in Japan; and - Set up the 6th ROW TF meeting. 	<ul style="list-style-type: none"> - Regarding the development of RMG, discussion with TF members will be conducted chapter by chapter; - Pilot project to deal with real illegal encroachment was discussed in the meeting; - Draft drawing of ROW was also discussed. More revisions are needed with further discussions; - Tentative schedule for trial flight of Drone and the preparation for the flight permission were explained and discussed; and - Draft agenda and schedule of next training in Japan were explained.
<p>6th ROW TF Meeting</p> <p>Date: 19th October, 2017</p> <p>Place: RID Meeting Room, Phnom Penh</p>	<ul style="list-style-type: none"> - Have training on using Total Station (Topcon) and Drone; and - Explain the basic knowledge on using drone in ROW Management. 	<ul style="list-style-type: none"> - Training was provided by Cam E.S Co., Ltd; - Data processing and short field practice of drone and Total Station were conducted; - Document process for drone flight permission was followed-up; and - It was agreed that TF members will join the trial flight test with the project team.
<p>7th ROW TF Meeting</p> <p>Date: 15th November, 2017</p> <p>Place: Kampong Speu Province and RID Meeting Room at MPWT</p>	<ul style="list-style-type: none"> - Have trial flight of drone at Kampong Speu Province with TF Members and DPWT; and - Conduct the data processing at MPWT. 	<ul style="list-style-type: none"> - TF members have learned how to: Prepare and assemble the component of the drone; Plan the flight and configuration; Know how to start the flight; Monitor and control the drone during the operation; Export the data/image to computer; and How to process the data and understand the quality requirement to meet the purpose of work.
<p>8th ROW TF Meeting</p> <p>Date: 23th November, 2017</p> <p>Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Explain the CSI (Current Status Identification) methods and UAV Test Flight report; - Explain the pilot project works; - Discuss and prioritize the Pilot Project Selection; and - Discuss the ROW TF members and Pilot Project Member Selection. 	<ul style="list-style-type: none"> - Based on the explanation of CSI methods and UAV Test Flight report, necessary CSI level is polygon of building encroachment. If the field work to collect ground information will affect the pilot project productivity, MPWT can implement it afterward; - National Road No.5 was chosen as the site for Pilot Project; - National Road No. 1 was chosen as another priority if National Road No.5 can be completed a head schedule; - It was agreed that data from Pilot Project will be used by MWPT, then MPWT will transfer knowledge to DPWT; and - At least 2 staffs from the target provinces should be appointed by MPWT for the Pilot Project.
<p>9th ROW TF Meeting</p> <p>Date: 19th December, 2017</p>	<ul style="list-style-type: none"> - Verify the Table of Content (TOC) of ROW Management Guidelines (RMG); 	<ul style="list-style-type: none"> - It was agreed that MPWT official will get through each chapter of TOC of RMG again and will do presentation in the next ROW TF meeting;

ROW TF Meetings	Objectives	Results
Place: RID Meeting Room, MPWT	<ul style="list-style-type: none"> - Discuss the preparation of Public Consultation Meeting (PCM); - Share knowledge gained from Trial Flight of Drone by MPWT official; and - Explain the pre-discussion results of the 3rd Country Technical Exchange on ROW Management in Thailand and Laos. 	<ul style="list-style-type: none"> - Purposes and preparation of PCM were discussed and confirmed; - Knowledge gained from trial flight of drone was shared and discussed among the TF members; and - Legal documents, situation of ROW management in Thailand and Laos were shared and discussed.
<p>10th ROW TF Meeting</p> <p>Date: 12th January, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Update the Table of Content (TOC) of ROW Management Guidelines (RMG); and - Update the ROW TF Members. 	<ul style="list-style-type: none"> - Table of Content of RMG were presented and updated by the TF members; and - New members of ROW TF members were added. <p>(For more details of the update of Table of Content of RMG, go to the minute of the meeting)</p>
<p>11th ROW TF Meeting</p> <p>Date: 9th February, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Discuss the Public Consultation Meeting (Case Study in Japan); and - Discuss the ROW Management on National Road No. 1 at Section 4. 	<ul style="list-style-type: none"> - Case study in Japan on Public Consultation Meeting (PCM) arrangement was explained and discussed; - Media, facilitator, and privacy are important during the PCM; - Purposes of PCM which MPWT is going to organize were discussed; and - Condition of ROW Management at National Road No.1 at Section 4 was discussed based on the site visit conducted by the project team.
<p>12th ROW TF Meeting</p> <p>Date: 12th February, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Discuss and confirm the purpose of ROW Management System (RMS); - Discuss the items to be collected and recorded for RMS; and - Discuss the ROW Management Map (RMM) and Database (RMD). 	<ul style="list-style-type: none"> - Besides these purposes of RMS (Road Maintenance, ROW Management and Resettlement), MPWT will use data from RMS for the project formulation for the future works; and - Items to be collected and recorded by RMS are shown in the list attached in the meeting memo.
<p>13th ROW TF Meeting</p> <p>Date: 26th February, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Confirm the items to be collected and recorded for RMS; - Discuss the ROW Management Database (RMD) requirement definition; and - Confirm the kick-off meeting for the organization of PCM and Material. 	<ul style="list-style-type: none"> - TF member presented and confirmed the items to be collected and recorded for RMS (find the updated items in the meeting memo); - Purposes of the usage of RMD and the capacity of DPWT and MPWT officials were discussed; and - Tentative date of kick-off meeting for PCM and material preparation will be discussed and finalized later.

ROW TF Meetings	Objectives	Results
<p>14th ROW TF Meeting</p> <p>Date: 19th March, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Discuss the progress for Kick-off Meeting for PCM; - Clarify the arrangement of PCM; and - Finalize the material printing for PCM. 	<ul style="list-style-type: none"> - Kick-off meeting with Phnom Penh Capital Hall will be held on 27th March from 15:00; - Presentation on ROW management by Chbar Ampov District will be included in the PCM agenda; and - Calendar to be provided during PCM cannot be printed on time. Media list will be shared by MPWT to Project to be selected.
<p>15th ROW TF Meeting</p> <p>Date: 5th April, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Inform TF members the summarized results of Kick-off meeting with Phnom Penh Capital Hall (PPCH); - Clarify arrangement schedule and responsibilities for PCM; and - Finalized the material printing for PCM. 	<ul style="list-style-type: none"> - PPCH agreed on the preparation of PCM and flight of drone to get the aerial image; - There will be another meeting with local authority, Chbar Ampov District, on 10th April, to discuss the preparation of PCM; - Date of PCM, venue and media will be confirmed again with District; and - Material printings for PCM were finalized.
<p>16th ROW TF Meeting</p> <p>Date: 30th April, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Review the Public Consultation Meeting on 27th and 28th April; - Discuss the Pilot Project Framework; and - Clarify the requirement of ROW Management System (RMS). 	<ul style="list-style-type: none"> - Comments on PCM by JICA Expert: PCM was implemented well with good cooperation between MPWT and local authorities; - Recommendation on PCM by JICA Expert: Organizers should explain over of PCM to all members and limit the time for remarks and presentations. - Pilot Project Framework was explained and discussed among the TF members; list of Pilot Project TF members will be submitted to project. - Requirements of ROW Management System (RMS) were discussed and confirmed.
<p>17th ROW TF Meeting</p> <p>Date: 28th May, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Explain the Pilot Project Plan; and - Explain the Pilot Project Task Force (PTF) activities and training. 	<ul style="list-style-type: none"> - The details of Pilot Project Plan and Current Status Identification (CSI) were explained and discussed among the TF members; - PTF members were divided into three groups (A, B and C) due to large number; and - Project experts and TF members discuss the arrangement of Kick-off meeting for Pilot Project at Kampong Chhnang Province.
<p>18th ROW TF Meeting</p> <p>Date: 19th June, 2018</p> <p>Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Clarify the Pilot Project Implementation; - Discuss the Illegal Encroachment Prevention (IEP); and - Set up the date for next TF meeting. 	<ul style="list-style-type: none"> - JICA Expert reported the progress of the Pilot Project; - About one-third of UAV survey has been finished in Kampong Chhnang Province; - Some items on the field survey were discussed and confirmed in the meeting; and - For the IEP, Public Consulting Meeting (PCM) is still considered as the effective approach.
<p>19th ROW TF Meeting</p> <p>Date: 29th June, 2018</p>	<ul style="list-style-type: none"> - Clarify the Pilot Project Implementation; - Discuss the IEP Approaches; and 	<ul style="list-style-type: none"> - For the responsibilities of MPWT and DPWT, MPWT will transfer knowledge and skills on the UAV flight and field survey to all DPWT officials at the end of the project;

ROW TF Meetings	Objectives	Results
Place: RID Meeting Room, MPWT	<ul style="list-style-type: none"> - Set up the date for next TF Meeting. 	<ul style="list-style-type: none"> - TF members will coordinate for the pre-discussion arrangement with other three DPWTs (Pursat, Battambang and Banteay Meanchey); - The design of handy fan was discussed and revised; and - For the IEP, project member presented the soft and hard approaches.
20th ROW TF Meeting Date: 9th July, 2018 Place: PID Meeting Room, MPWT	<ul style="list-style-type: none"> - Discuss the IEP approaches; - Confirm some requests for National Budget; - Discuss the revised Table of Contents of ROW Management Guidelines (RMG); - Confirm the courtesy meeting to Pursat DPWT; - Explain the Draft Outline of 2nd Third Country Technical Exchange; and - Set up the next ROW TF Meeting. 	<ul style="list-style-type: none"> - TF member gave the presentation on the IEP approaches with some suggestion; - Budget for IEP were discussed; - Table of Contents will be revised again based on the discussion and activities of Pilot Projects; - Courtesy to Pursat DPWT was set; and - Draft schedule of 2nd Third Country Exchange was explained.
21st ROW TF Meeting Date: 16th July, 2018 Place: RID Meeting Room, MPWT	<ul style="list-style-type: none"> - Explain the progress of the arrangement of Third Country Technical Exchange Program; - Discuss the IEP Approaches; and - Notify the Pilot Project of Current Status Identification (CSI). 	<ul style="list-style-type: none"> - The 2nd Third Country Technical Exchange consists of Seminar on ROW Management tentatively scheduled on 27th September 2018 and Country Visit to Laos and Thailand from 22nd to 26th October 2018; - The guest speakers from Laos MPWT and Thailand DoH will be invited; and - For IEP approaches, project team member explained the budget estimation for the hard measures.
22nd ROW TF Meeting Date: 17th August, 2018 Place: RID Meeting Room, MPWT	<ul style="list-style-type: none"> - Discuss on the presentation for Technical Exchange Seminar on 27th September; and - Discuss on some matters related to Pilot Project Activities. 	<ul style="list-style-type: none"> - TF member presented the draft presentation on legal framework, current situation and challenges for ROW Management in Cambodia; - Other TF members and JICA project team will help to check and discuss the presentation again; - IEP approaches will be applied to some sections of National Road No.1 as a part of Pilot Project; and - Building survey team will distribute remaining handy fans to local people along National Road No.5.
23rd ROW TF Meeting Date: 31st August, 2018 Place: RID Meeting Room, MPWT	<ul style="list-style-type: none"> - Discuss on IEP approaches for Pilot Project; and - Discuss on Third Country Technical Seminar in details. 	<ul style="list-style-type: none"> - Project has proposed the National Road No.1 as a candidate for the application of IEP; however, Project has to consider one of JICA Loan Projects; - Therefore, National Road No.5 is the candidate since Project is implementing the Pilot Project there;

ROW TF Meetings	Objectives	Results
		- For the Technical Exchange Seminar on ROW Management, TF members have already decided their responsibilities for the presentations.
<p>24th ROW TF Meeting Date: 20th September, 2018 Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Review the presentation from Thailand and Laos for Third Country Technical Exchange; and - Discuss the CSI/IEP approaches for Pilot Project. 	<ul style="list-style-type: none"> - ROW TF members and JICA Project Team had reviewed and gone through the contents of the presentation material sent by Laos MPWT and Thailand DoH; and - Project Team presented and explained the Format Data Entry Interface.
<p>25th ROW TF Meeting Date: 25th September, 2018 Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Confirm the presentation and logistic arrangement for the upcoming Seminar on ROW Management. 	<ul style="list-style-type: none"> - All arrangements were confirmed.
<p>26th ROW TF Meeting Date: 1st November, 2018 Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Report the Third Country Technical Exchange in Laos and Thailand; and - Discuss the CSI/IEP approaches for Pilot Project. 	<ul style="list-style-type: none"> - Throughout the meeting, the report on the third country technical exchange covered the comparison on Current Status of ROW Management in Cambodia, Laos and Thailand on four main points: (1) Legal Concept; (2) Project Fund/Social Support; (3) ROW Management and (4) Counter Measures/IEP; - Report also importantly discussed the outputs/lesson-learned and recommendations; - Database experts from Cam Info Services presented the process of ROW Management Database (RMD) system with the explanation on characteristics of RMD, RMD System Overview, High Level Overview and Application Flow; and - JICA Expert also presented the criteria to select the IEP priority areas.
<p>27th ROW TF Meeting Date: 12th November, 2018 Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Inform the 5th Technical Seminar on 13th November, 2018 at Phnom Penh Hotel; and - Discuss each presentation for the seminar. 	<ul style="list-style-type: none"> - Based on the discussion, there were some small changes or revision for each presentation; and - The ROW TF members are ready for the tomorrow seminar. Other logistics were also confirmed.
<p>28th ROW TF Meeting Date: 13th November, 2018 Place: Phnom Penh Hotel</p>	<ul style="list-style-type: none"> - Present Hanshin Expressway ROW Management in Japan; and - Discuss the CSI/IEP Approaches for Pilot Project. 	<ul style="list-style-type: none"> - Presentation by Hanshin Expressway covered the asset management and legal management; - Based on this presentation, ROW TF members could understand the condition of ROW management in Japan; - Throughout the discussion, ROW TF members; especially Pilot Project TF members agreed the classification of Areas to be applied IEP. The hard recommendations/measures were prioritized; and - Installing ROW pole at Rural areas and Marking ROW line are the first priority.

ROW TF Meetings	Objectives	Results
<p>29th ROW TF Meeting Date: 7th December, 2018 Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Discuss on new CSI approaches for Pilot Project; and - Discuss on Plan for IEP Approaches for Pilot Project. 	<ul style="list-style-type: none"> - TF members would like to ask UAV team to take photos of ring road/bypass of Kampong Chhnang City, Battambang City and Serey Sorphorn City; - Project Team will confirm the definition of Access Road and its definition on GIS Processing; - About budget allocation for ROW Management in 2019, ROW TF members will check with management level and DPWT; and - Discussion on Road Care App, because there is a request from MPWT to combine with Project Database.
<p>30th ROW TF Meeting Date: 14th January, 2019 Place: RID Meeting Room, MPWT</p>	<ul style="list-style-type: none"> - Discuss on new CSI approaches for Pilot Project; and - Discuss on RMD Development. 	<ul style="list-style-type: none"> - CAM Info Service presented the RMD development; - ROW TF members commented and made some changes in the Databases; - JICA Project Team presented the new pilot project on area selection, major differences and GIS work-buildings; - ROW TF members suggested to add information of constructing year of structures in the survey for new CSI approaches; and - JICA Project Team added information on 3rd Training in Japan and IAIA in Australia.
<p>31st ROW TF Meeting Date: 30th January, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Discuss the procedure to establish the Inter-Ministerial Committee on ROW Management through sharing the presentation on the Pilot Project Progress for ROW Management; and - Confirm the arrangement of 3rd JCC meeting. 	<ul style="list-style-type: none"> - Director of RID, Mr. Chhim Phalla, gave the opening remarks and emphasized that MPWT only is not enough to manage the ROW; we need other ministries such as Ministry of Land Management, Urban Planning and Construction (MLMUPC) and Ministry of Interior (MoI) to work together; - JICA Project Team members presented the Progress of Pilot Project and ROW TF member presented Illegal Encroachment Prevention (IEP) Approaches; - Based on the discussion, officials from MLMUPC and MoI agreed on this initiation to establish the inter-ministerial committee on ROW management; however, they concern about which level should Inter-committee stands and which ministries should involve. Moreover, which ministry or agency own the ROW; - It was a good discussion and hoped to have more discussion; - ROW TF member requested to the Project to take the aerial photos by drone from Prek Kdam bridge to ByPass in Kandal Province; and - JICA Project Team explained the agenda of 3rd JCC meeting and each responsibility of ROW TF members on the presentation.

ROW TF Meetings	Objectives	Results
<p>32nd ROW TF Meeting Date: 8th February, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Discuss on new CSI approaches for Pilot Project with DPWT. 	<ul style="list-style-type: none"> - JICA Project Team presented the new CSI approaches; - After the discussion about the role of implementation for CIS and IEP approaches some items have been revised; - JICA Project Team also followed up the cost estimation for IEP approaches; and - JICA Project Team also requested to ROW TF members to share the drawings of installation items such as ROW Poles and Fence and candidates of contractor.
<p>33rd ROW TF Meeting Date: 27th February, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Discuss ROW Management Database (RMD); and - Discuss on new CSI approaches for Pilot Project. 	<ul style="list-style-type: none"> - CAM Info Service reported the progress of RMD development; - ROW TF members suggested to add the roads network in Cambodia in Shapefile which will be officially asked to MPWT; - There were more requests from ROW TF members on the Database; and - JICA Project Team explained the upcoming activities such as Training of Trainer (TOT) schedule, the 6th Seminar on consultation of standard drawing and report of Training in Japan and the 3rd Third Country Technical Exchange Program in April.
<p>34th ROW TF Meeting Date: 6th March, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Discuss on IEP approaches for Pilot Project; and - Confirm the schedule of some events. 	<ul style="list-style-type: none"> - JICA Project Team confirmed and consulted the schedule of TOT with ROW TF Members; - Numbers of ROW TF members who will attend the TOT were decided and schedule will be checked by ROW TF Members; - There were discussions on Hard Approaches of IEP. There were some revisions on the drawings of Hard structures for IEP; and - JICA Project team also presented and confirmed the standard drawings which will be presented in 6th Seminar.
<p>35th ROW TF Meeting Date: 13th March, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Confirm Seminar and TF meeting with DPWT on 15th March, 2019; - Discuss the IEP Hard Approaches; and - Consult about IAIA material review. 	<ul style="list-style-type: none"> - JICA Project Team and ROW TF members confirmed the preparation of the 6th Seminar; - JICA Project Team explained the purpose of TOT and confirmed the schedule with TF members. Fully attending to all trainings for TOT of CSI is ideal; - JICA Project Team also explained the purpose of IEP consultation meeting the purpose of TF meeting with DPWT. The proposed schedule for IEP was set but will be confirmed during the 36th ROW TF again; - There were also the discussions on IEP Hard Approaches. ROW TF members made the comments on each drawing. Those drawings will be revised; - JICA Project Team also explained the papers, presentations material and poster for IAIA; and

ROW TF Meetings	Objectives	Results
		- JICA Project Team and ROW TF members discussed and confirmed the budget for IEP.
36th ROW TF Meeting Date: 15th March, 2019 Place: SUNWAY Hotel, Phnom Penh	- Discuss the IEP Soft and Hard Approaches, especially the IEP Consultation Meeting.	- JICA Project Team briefly overviewed the discussion in the 28th ROW TF meeting; - JICA Project Team explained the CSI and IEP Method, the new CSI method, confirmed the Soft Approaches and discussed the IEP Consultation Meeting Arrangement; and - At the end of meeting, the arrangement and date of IEP consultation Meeting with Kampong Chhnang DPWT were confirmed.
37th ROW TF Meeting Date: 23rd April, 2019 Place: ICD Meeting Room	- Confirm the contents of Standard drawings; and - Discuss the IEP Hard Approach.	- JICA Project Team presented the IEP Approaches applied in the pilot Project and standard drawings; - ROW TF Members suggested to relocate the existing open channel and utilities to right place according to the standard drawings; and - ROW TF members also added that we can change concrete drainage to pipe drainage instead as it costs less than concrete one.
38th ROW TF Meeting Date: 28th May, 2019 Place: RID Meeting Room	- Discuss ROW Management Guidelines for Proper ROW Usage.	- JICA Project Team and ROW TF members discussed and confirmed the proper procedures of ROW Usages; - JICA Project Team will draft or modify the forms for ROW permission; then ROW TF members can check; and - JICA Project Team and ROW TF members also discuss the preparation process for budget plan of MPWT.
39th ROW TF Meeting Date: 07th June, 2019 Place: RID Meeting Room	- Discuss the ROW Management Database.	- Expert from Cam Info Service explained the progress of Web GIS and Tablet App development; and - JICA Project Team also briefly explained on how to record data of each IEP Approaches.
40th ROW TF Meeting Date: 14th June, 2019 Place: PID Meeting Room	- Discuss the ROW Management Guidelines (ROW Usage and permission).	- JICA Project Team presented the Proper Usage of ROW including the facility maintenance and public facility within ROW Area, permission for temporary land use within ROW, temporary land use with and without fees, and outline of patrol work; - ROW TF members and JICA Project Team discussed more on the validity of temporary use fee within ROW, the frequency of ROW patrol and routine maintenance and the management of the fee collection of private sign-board along national roads; and - The ROW TF members will check and discuss more with the management team; then they can give their comments or share their concerns on this proper ROW usage.

ROW TF Meetings	Objectives	Results
41st ROW TF Meeting Date: 21st June, 2019 Place: RID Meeting Room	- Inform about the construction works on IEP Hard Approaches.	- Contractors from Professional Engineering Plus (PEP) company presented the scope of works, methodology, heavy equipment which will be used at the site, and the construction team's responsibilities; and - ROW TF members, JICA Project Team and contractors had clarified some items. At the end, JICA Project Team has requested the contractors to submit the safety plan.
42nd ROW TF Meeting Date: 28th June, 2019 Place: RID Meeting Room	- Discuss the Budget Plan for ROW Management Next Year.	- JICA Project Team presented the budget plan by focusing on Background of Resettlement cost based on RAP report from MEF, Advantages of ROW Management, ROW Management Cost (based on the cost of Pilot Project), Action Plan and comparison on the cost and Target Budget; and - the cost can be reduced if the field survey can be done by MPWT. This budget Plan can be updated if ROW TF members have any comments.
43rd ROW TF Meeting Date: 05th July, 2019 Place: RID Meeting Room	- Continue the discussion on the Budget Plan for ROW Management Next Year.	- JICA Project Team explained the revised budget plan based on the comment from the previous ROW TF meeting; - Followed the discussion after the presentation, the budget plan for ROW Management will be finalized; - JICA Project Team updated the condition of the Pilot Project. For the construction of IEP in front of the Chrey Bak primary school in Kampong Chhnang Province, in order to make sure that underground utilities are untouched, the size of new open drainage will be adjusted; and - At the end of this month, Project are going to organize the Training of Trainers. Then, ROW TF members will give the lectures to DPWT Officials on theory, CSI and IEP Procedures, and Database.
44th ROW TF Meeting Date: 12th July, 2019 Place: RID Meeting Room	- Explain the draft agenda for Workshop on Training of Trainers (ToT) for Future Practice of ROW Management Methods.	- JICA Project Team had proposed the date (31st JULY) of workshop and explained the draft agenda for the workshop; - ROW TF members agreed on the proposed date and agenda; - The Project will submit the letter to H.E. Nou Vaddhanak to ask for the coordination to invite the DPWTs' officials from Kandal, Kampong Chhnang, Pursat, Battambang and Bantey Meanchey Provinces; and - After this workshop, the Project hopes that MPWT will be able to organize the next workshops with other DPWTs by themselves.

ROW TF Meetings	Objectives	Results
<p>45th ROW TF Meeting Date: 19th July, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Continue the discussion on the Budget Plan for ROW Management for next year; and - Discuss on IEP Soft Approach (Patrol). 	<ul style="list-style-type: none"> - JICA Project Team presented the status of ROW pole installation at National Roads 1 and 2 digits. Based on this, IEP cost has been updated; - ROW TF members requested the project to prepare the cost of ROW Hard Approaches for road cross-section near urban/city areas with the length of 1km; - There were also some discussions on the IEP Soft Approach Patrol; and - Besides these, Workshop on Training of Trainers will be held at SUNWAY Hotel. ROW TF members also confirmed their duties on the presentation.
<p>46th ROW TF Meeting Date: 24th July, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Discuss on legal document related to ROW and Pilot Project Patrol; and - Report and confirm the updated Budget Plan and Next schedule. 	<ul style="list-style-type: none"> - JICA Project Team explained the relevant document related to ROW-inside land Usage Permit and land filling and construction based on the legal document collected from resident in Chrey Bak Commune, Kampong Chhnang Province and from the attachment of Sarachor No.007 and explained the investigation sheet for the Pilot Project Patrol; - JICA Project Team will confirm the flow of document related to ROW usage permit again after the Pilot Project Patrol; - ROW TF members also can share the project other legal documents related to ROW Usage permit if they have; and - JICA Project Team also presented the updated budget plan for ROW Management based on the comments from the previous ROW TF meeting.
<p>47th ROW TF Meeting Date: 30th July, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Confirm the workshop (on July 31) in details (date, time, place, agenda, presenter, presentation, and demo); and - Update the progress report of RMS App Development. 	<ul style="list-style-type: none"> - JICA Project Team and ROW TF members confirmed the preparation of Presentation materials, and field practice for Field Survey and Patrol; and - JICA Project Team also explained the progress of RMS App. This RMS App will be also explained in the workshop by using the Tablets. The Tablets will be handover to MPWT; then MPWT can allocation to DPWTs along National Road No.5.
<p>48th ROW TF Meeting Date: 8th August, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Report the summary of workshop for Practice of RMS on 31st July and discuss the next schedule; and - Discuss the Pilot Project for Patrol at Chrey Bak Commune, Kampong Chhnang Province. 	<ul style="list-style-type: none"> - JICA Project Team followed up the meeting on Budget Plan for ROW Management; - Assistant of Project presented the summarized results of workshop evaluation and test and some comments on the improvement of workshop arrangement; - There were discussions on the next workshops arrangement; - JICA Project Team and ROW TF members discussed the arrangement of Pilot Project Patrol; and

ROW TF Meetings	Objectives	Results
		<ul style="list-style-type: none"> - Project will organize the kick-off meeting at Kampong Chhnang DPWT on Pilot Project Patrol and submit the letter to H.E. Nou Vaddhanak to ask for his coordination.
<p>49th ROW TF Meeting Date: 20th August, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Discuss on the Pilot Project IEP Survey (Patrol) 	<ul style="list-style-type: none"> - JICA Project Team presented the Pilot Project for IEP Survey (Patrol); - There were discussions on the ROW land use permission, types of temporary ROW Land Use, request letter to MPWT, and construction works on IEP at Pilot Project; and - Confirmed the Kick-off meeting arrangement at Kampong Chhnang DPWT.
<p>50th ROW TF Meeting Date: 6th September, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Report the evaluation results of two ToT workshops; and - Inform the number of events till the end of the project. 	<ul style="list-style-type: none"> - JICA Project team presented the results of evaluation and comprehensive tests of the two ToT workshops; - Next Taskforce meeting will be about the detailed discussion on suggestions from participants; and - JICA Project Team reported the next events/activities till the end of project.
<p>51st ROW TF Meeting Date: 17th September, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Inform and get confirmation on 3D image for ROW signboard; and - Discuss the functions of ROW Management Database (RMD). 	<ul style="list-style-type: none"> - JICA Project team confirmed the location of 3D ROW signboards and explained the functions of RMD; - ROW TF members requested to change the color of signboard to yellow and to develop the online ROW use registration; and - there were more discussions on the RMD based on the comments and suggestions from workshop on 29th and 30th September.
<p>52nd ROW TF Meeting Date: 26th September, 2019 Place: RID Meeting Room</p>	<ul style="list-style-type: none"> - Confirm the following schedules (seminar at Pilot Project, etc); - Confirm the preparation for the seminar on 2nd October, 2019; and - Explain the draft ROW Management Guidelines (RMG). 	<ul style="list-style-type: none"> - JICA Project Team detailed the following schedules such as Seminar on 2nd Oct, Visiting Sihanouk Ville Province, completion of Pilot Project Construction, seminar at Pilot Project Site, final JCC and Seminar); - JICA Project team also explained on the preparation of Seminar on 2nd Oct, 2019. ROW TF members agreed on the agenda and requested to invite the officials from General Directorate of Public Works; and - Project Team also explained briefly the content of RMG and requested to ROW TF members to review it by 9th Oct, 2019.
<p>53rd ROW TF Meeting Date: 3rd October, 2019 Place: RID Meeting</p>	<ul style="list-style-type: none"> - Clarify comments and requests from Technical Seminar on 2nd October, 2019; - Confirm the information collection at IEP Patrol; - Confirm the following schedules (reviewing the RMG and Visiting the SHV); and 	<ul style="list-style-type: none"> - Project assistant presented the comments and requests from participants attending technical seminar; ROW TF members gave the correction and clarification accordingly; - JICA Project Team presented and confirmed the information collection at IEP Patrol. ROW TF members requested to add more steps regarding the process for asking the temporary ROW Usage permission; and

ROW TF Meetings	Objectives	Results
	- Set up the next TF meeting.	- JICA Project team followed the reviewing the RMG and confirmed the participation for the site visit at SHV.
54 th ROW TF Meeting Date: 24 th October, 2019 Place: RID Meeting Room	- Confirm the basic policy for IEP Patrol; and - Inform upcoming 4 th JCC Meeting.	- JICA project team informed the ROW TF members about the grant of UAV flight permission from SHV provincial office; - JICA Project Team presented and confirmed the basic policy for IEP Patrol; confirmed the condition of outsourcing, delegation of flowchart, and number of patrols, and informed the upcoming 4 th JCC meeting.
55 th ROW TF Meeting Date: 28 th October, 2019 Place: PID Meeting Room	- Update and discuss the arrangement of the 4 th JCC Meeting	- JICA Project Team confirmed the date and venue for the 4 th JCC meeting and explained the agenda; and - JICA Project Team and ROW TF members also confirmed the contents of the presentations and participation from other departments inside MPWT and other Ministries.
56 th ROW TF Meeting Date: 4 th November, 2019 Place: RID Meeting Room	- Inform the key points to be reported at the 4 th JCC Meeting; and - Confirm the comments on the construction of pilot project at Chrey Bak Primary School.	- JICA Project Team gave the detailed information on the agenda of 4 th JCC meeting; and - There were discussions and confirmation on the comments on the construction of Pilot Project at Chrey Bak Primary School.
57 th ROW TF Meeting Date: 14 th November, 2019 Place: PID Meeting Room	- Update the Appendix Manuals of RMG; and - Inform the database.	- JICA Project Team explained the details of each appendix of RMG and requested to ROW TF members to review and check those appendices by 20 th November, 2019; and - JICA Project Team also requested to have detailed explanation on Database during the next TF meeting and confirmed the proposed date of final seminar.
58 th ROW TF Meeting Date: 25 th November, 2019 Place: PID Meeting Room	- Confirm the final draft of ROW Management Guidelines (RMG) - Confirm training schedule for ROW Management Database (RMD); and - Discuss the presentations for Final Seminar	- JICA Project Team requested the reviewing of RMG to ROW TF members to review and they will check it by 27 th November, 2019; and - ROW TF members discussed and commented to the agenda of final seminar and decided their charge.
59 th ROW TF Meeting Date: 2 nd December, 2019 Place: PID Meeting Room	- Training on RMD by database contractor	- ROW TF members were trained for the use and operation of RMD by its contractor.
60 th ROW TF Meeting Date: 9 th December, 2019 Place: PID Meeting Room	- Review of final seminar - Closing the ROW TF	- JICA Project Team and ROW TF members discussed output of final seminar with its reviewing, and - They agreed TF closing

J3-4: RMM and RMD

PDM Means of Verification 3.5.1 JICA Expert Report (RMM and RMD)

This section describes the outline of ROW Management Map and ROW Management Database that are produced in the project that incorporate lessons learnt from the pilot project. The physical devices and database server as well as other products are delivered to Ministry of Public Works and Transport in Cambodia.

1. Necessity and Objectives of Road Management Map and Road Management Database

1.1 The Framework of ROW Management System

The integrated road management needs a systematic approach based on the integrated and concerted fact-based information. The project mainly targets environment and social aspects of road management that entails management of Right of Way and EIA processes. The chart below outlines the overall framework of this project. MPWT does not have tools to gather information as to the current status and monitor the condition. This will help to manage right of way and for new road expansion and estimate the cost for resettlement. The map and database are provided as practical tools to manage the information within the central government.

Chart: ROW Management and Target Area of CESCoR (excluding activities on EIA and EMP)

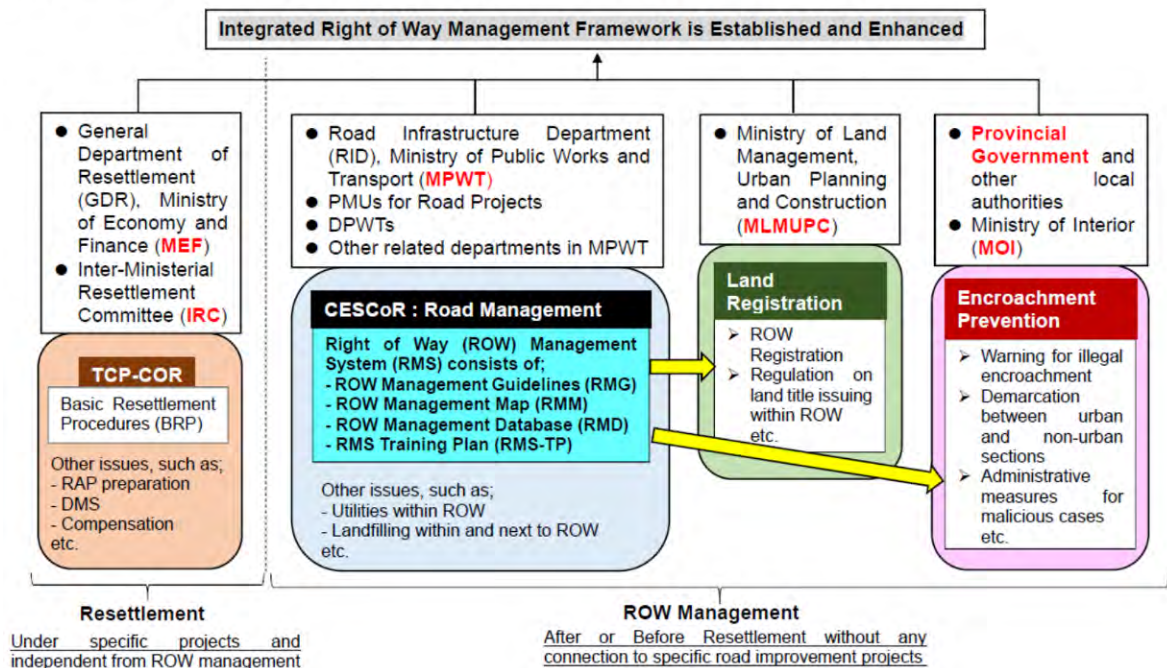


Figure 1-1 Integrated ROW Management Framework

1.2 Objectives of ROW Management Map and ROW Management Database

The objectives of the ROW Management Map (RMM) and ROW Management Database (RMD) are to:

- i) Visualize the location and current situation of the right of way on an updated map to record and monitor the situation by aerial photo, field survey and patrol
- ii) Use the collected information for a smooth implementation of ROW management such as considering countermeasures for illegal encroachment and development in case of road improvement project such as widening of existing road

2. Concept of RMM and RMD

Both Current Status Identification (CSI) and Illegal Encroachment Prevention (IEP) activities are embedded in the system to develop RMM and RMD. The development of RMM and collection of baseline information into RMD are implemented by CSI activities. The baseline data is utilized for analysis of IEP approaches such as to classify potential, populated and non-dense areas by the density. Also, the latest situation of the encroachment will be updated to RMD by IEP approaches such as patrol by DPWT.

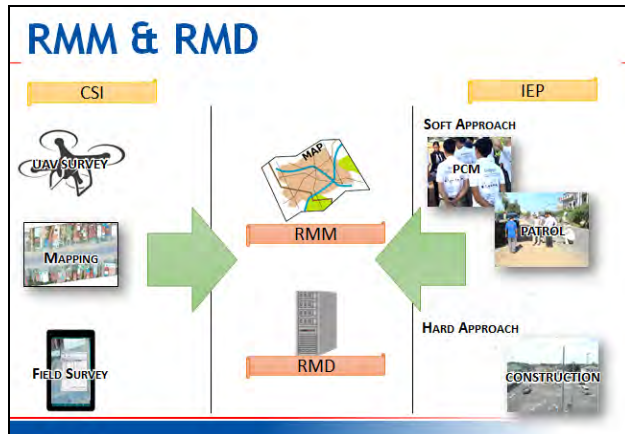


Figure 2-1 Activities concerned in the RMM and RMD

The roles and activities that are included in CSI and IEP are outlined in the following table. The responsible authorities are MPWT, DPWT and local authorities. RID & DPWT should understand roles and collaborate with each organization to collect basic information through the surveys.

Table 2-1 Activities and Division of Work

CSI ROLE					IEP ROLE						
	ITEM	MPWT	DPWT	LOCAL AUTHORITY		ITEM	MPWT	DPWT	Local Authority	MLM/PC	OTHER
KICKOFF	Arrangement	✓	✓		Classification		✓				
	Implementation	✓	✓	✓	1) PCM		✓	✓	✓		
	Flight permission	✓	✓	✓	2) High school / University		✓				✓
UAV SURVEY	UAV survey	✓	✓		3) Local government office		✓	✓	✓	✓	
	Supervision (for outsourcing)	✓			1) Regular patrol		✓	✓	✓		
	Image processing	✓			2) Collaborating w/ local authorities			✓	✓		
OFFICE WORK	Mapping (data production)	✓			3) Appealing to court		✓	✓	✓		✓
	FS permission	✓	✓	✓	1) ROW permit		✓	✓	✓		
FIELD SURVEY	Field survey		✓		2) ROW registration		✓	✓	✓	✓	
	Supervision	✓			3) Access road permit		✓	✓			✓
GIS	data finalization	✓			1) Record of "raising awareness"		✓	✓			
					2) Record of "Monitoring"		✓	✓			
					3) Record of "Permission"		✓	✓			

2.1 The System

The following illustration shows a whole working flow of the CSI system. The data collected from field surveys at the respective road sites are instantly uploaded to the database installed at MPWT and can be downloaded and edited. The information can be used for patrolling, planning and budgeting.

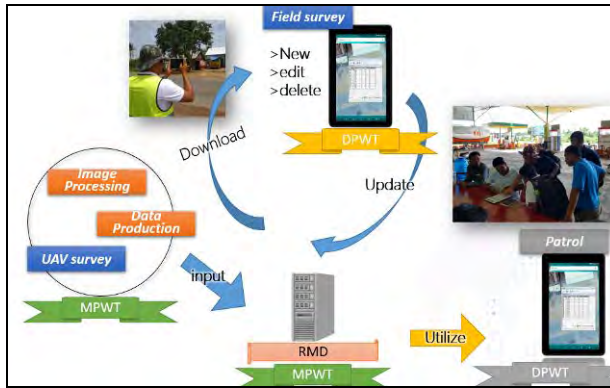


Figure 2-2 The System of Database for Current Status Identification (CSI)

The development structure of database system for RMM and RMD is constituted database server and network device as hardware and database system, WebGIS and TableApp as software. The outline of each function is described as the below. And detailed functions and structures have been summarized with the manuals.

- Database Server, Network Device and Database System:

Linux based server machine and network device have been installed to MPWT for development of database system as hardware. Also, the structure of database system for RMM and RMD is consisted two (2) database platforms which are MySQL for storing information by relational database system and PostgreSQL to show exact location in the RMM based on Geographic Information System (GIS). The database server has stored all RMM data which is consisted ortho-image/aerial-photo by UAV survey, drawing of polygons and mapping of points by data processing of GIS software. Also, original data source of RMD can be modified such as change location, attitude and so on by GIS software as administration privilege. In addition, the RMD can manage user privilege such as to control the access by limited users.
- WebGIS (Map viewer and editor of browser):

The WebGIS has been developed by Java and PHP script to display the RMM at general web-browser at MPWT by local network. The WebGIS has some functions which are to show the RMM, to edit the point for finalization and to analyze the result of survey for IEP approaches to connect with RMD. Also, some data source can be imported to RMD and exported for general report and data format such as Excel format via the functions of WebGIS and RMD.
- TabletApp (Data input tool and map viewer of tablet device):

The TabletApp has been developed by Java script for Android Device to browsing the RMM by online/offline. The TabletApp has some functions which are to show location map, to edit the point by field survey via connection with RMD.

About tentative method for developing RMM and RMD to be reached concrete system as above, the project tried using for data input at field survey by AvenzaMaps and data processing at office by QGIS and Excel following basic concept during pilot project. However, this tentative method has not been continued because of license limitation of AvenzaMaps and inefficient work between field and office.

- AvenzaMaps:

The AvenzaMaps is offline map viewer for smartphone and tablet devices. It can store geo-PDF as base-map and CSI points according on data input format into the device. Also, the points can be shown with the base-map, updated with attitude and exported to kml-format.
- Data processing by QGIS and Excel:

The data processing by QGIS and Excel is to convert data from kml-format to shp-file in order to utilize to RMD. After the field survey, technical officer of MPWT should receive updated CSI

points by kml-format from field survey and organize data format for RMD through converting from kml-format to shp-file and csv-format.

The work process of AvenzaMaps and data processing have been simplified and compiled into the process of TabletApp and WebGIS based on lesson learned from pilot project. However basic

2.2 Current Status Identification (CSI)

Current Status Identification (CSI) focuses on data collection related to situation of right of way along national roads and provincial roads across the country in order to creating right of way management map and database as baseline for effective right of way management.

The purpose of CSI is to study on a current situation of right of way and developing a ROW current situation map to capture aerial photo by UAV survey and record encroachment within ROW as CSI point by field survey for a baseline so that appropriate measures can be applied for effective ROW management and illegal encroachment prevention.

The CSI work covers on all national roads under management of MPWT. A primary focus for the CSI is the 1-digit national roads of which information is to be compiled on a ROW management map. After the completion of the map for the 1-digit national roads, 2-digit national roads will be targeted.

Main contents of CSI are:

- 1) UAV survey
- 2) Data processing for base-map
- 3) Field survey to update CSI point



Figure 2-3 Steps of Current Status Identification (CSI)

2.2.1 Survey Application Device

The project introduced an application program which called TabletApp for a tablet device to show the base-map and edit CSI points. The officer who conduct a field survey can bring a tablet device to the field and record the data, which will be instantly sent to the central server at MPWT and stored in a database. The TabletApp can work both conditions for online and offline in case to face bad network condition at local area along national roads. In order to simplify data input at the field by the surveyor, the input and selection from several codes is applied on the TabletApp.



Figure 2-4 Application Interface on a device



Figure 2-5 Mapping interface on the device

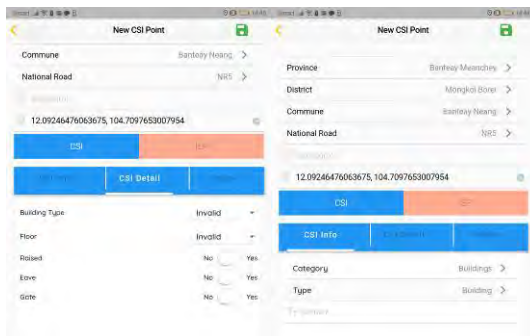


Figure 2-6 Data Input Interface on a device

2.2.2 Field Survey

1) Permission for Survey

A permission is needed before commencement of a field survey from a concerned authority.

2) Survey Team Arrangement

A suitable size of a survey team is consisted of four team members.

- Field Survey Leader: 1 person will be assigned to manage Field Survey Team from MPWT or DPWT.
- Field Surveyors: 3 persons for 1 team will be assigned to implement Field Survey from DPWT. The team could complete 100km within 3 months.

An arrangement of a team may vary depending on scale and priority of road improvement project.

2.2.3 Report and Data Analysis

After the field survey, MPWT should summarize collected information/data in order to consider a plan for IEP approaches such as to select priority along surveyed area. WebGIS has some functions which are Report, Data Analysis and Classification. The detail of each function is described as the below.

1) Report

Report functions have been provided as the following 3 types.

- **Individual Report:** The individual report of each encroachment will be produced by PDF in order to share from MPWT to DPWT as the result of field survey.

IEP Survey format on Permission of ROW Land Use (Paper-based survey)
 ទម្រង់បែបបទស្រាវជ្រាវការការពារការទន្ទ្រានដីចំណីផ្លូវឧស្សាហកម្ម (IEP) លើការអនុញ្ញាតក្នុងការប្រើប្រាស់ដីចំណីផ្លូវ (ទម្រង់ជាគ្រួសារ)

for Surveyor សម្រាប់អ្នកចុះស្រាវជ្រាវ


Date, Time: កាលបរិច្ឆេទ និងពេលវេលា	Block No.: លេខប្លុក
<input type="text"/>	KPC091
Name of Surveyor: ឈ្មោះអ្នកចុះស្រាវជ្រាវ	Photo: រូបថត
<input type="text"/>	NH005_KPC091_0030_20180716141400.jpg
Position of Surveyor: តួនាទីអ្នកចុះស្រាវជ្រាវ	
<input type="text"/>	
Location Number/ID (Shown in the map): លេខទីតាំង/លេខ ID (មាននៅលើផែនទី)	
NH005_KPC091_0030	
Type of Possession(Refer from CSI): ប្រភេទនៃកម្មសិទ្ធិ (យោងលេខប្រើក្នុង CSI)	
1001_Residence	

Figure 2-7 Individual Report of CSI field survey

- **Summary Report:** The summary report by surveyor will be produced by PDF in order to share from MPWT to DPWT as the result of field survey.

CSI Survey Result																	
SURVEYOR		Position				DATE											
No	ID Mark	Type(Code+T)	Eave	Gate	Raised	Raised Type	Fiber	Building Type	Paved	with Drainage	Condition	Distance from Centerline	Photo1	Photo2	Photo3	Area(sq.m)	Status
1	NH005_KPC091_0030	1001_Residence	x	x	x	Concrete	Concrete	Concrete	x	x	Good	10m	Image 0001 photo1	Image 0001 photo2	Image 0001 photo3		Completed
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Figure 2-8 Summary Report of CSI field survey

- **Filter:** The filter will sort by selected key items to display on WebGIS in order to explain and show current condition of encroachment to management level of MPWT.

No	ID Mark	Type(Code+T)	Eave	Gate	Raised	Paved	with Drainage	Distance	X	Y	Area (sqm)	Current Permission	Receive Application Form/Satohor007(submissiondate)	Surveyor	Survey Date	Status	Action
1	NH005_KPC091_0030	1001_Residence	x	x	x	x	x	10m	123.123	123.123	0	V/N	V/N	Mr. XXX	Date	Updated	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Figure 2-9 Filter function on WebGIS

2) Data Analysis and Classification

The results of field survey are collected number and type of structures into RMD for planning of IEP approaches by classification. Basic data analysis as survey result including number of encroachment and classification is proceeded to classify by some criteria. The criteria for IEP approaches are classified by density of land use for structures, in other words density of population, for input into the database. A conceptual framework is planned as the following Table and Figure.

Especially to display on WebGIS, each block in the RMM will be shown several colors due to classification threshold has been set for RMD.

Table 2-3 Classifications

Classification		Condition of Classification
Criteria 1	Potential Area	There are over 50 points of Buildings, code: from 1000 to 1999, within a block. except “Criteria 2”.
Criteria 2	Populated Area	There are over 40% of temporary shop and mobile shop, code: 1005 and 1014, within a block of “Criteria 1”. Especially the percentage will be double if over 80 points of Building in the block.
Criteria 3	Potential Area	There are over 3 points of open area, code:2003, within a block. except “Criteria 1” and “Criteria 2”.
Criteria 4	Non-Dense Area	Other as above

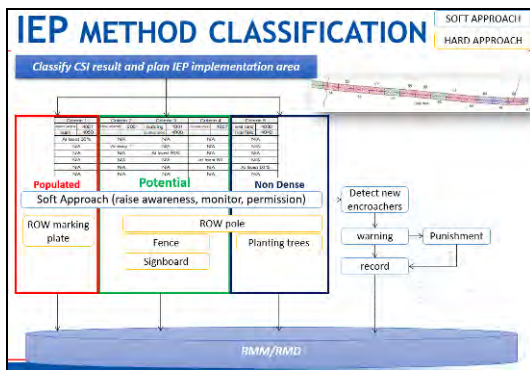


Figure 2-10 IEP Method Classification

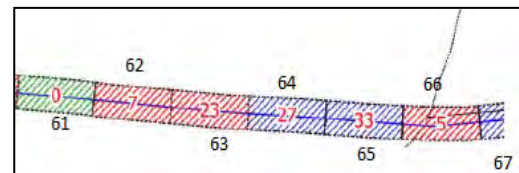


Figure 2-11 Display at RMM

IEP Result/Summary of Illegal Encroachment														
Province		District		Commune		Classification		Next IEP Approach						
1. Summary of Encroachment														
code	Type of Encroachment	Qty	Area (sq.m)	code	Type of Encroachment	Qty	Area (sq.m)	code	Type of Encroachment	Qty	Area (sq.m)	code	Type of Approach	Area (sq.m)
1000	Building	0	0	2000	Approach to built	0	0	3100	Signboard public	0	0	4000	Type in remarks	0
1002	Residence	0	0	2001	Access Road	0	0	3110	Signboard private	0	0	4001	Other	0
1003	Residence/Commercial	0	0	2002	Level Filling	0	0	3200	Street Light	0	0	5000	Soft hard approach	0
1004	Commercial	0	0	2003	Open Area	0	0	3300	Postbox	0	0	5001	Other	0
1005	Shop	0	0	2004	Parking	0	0	3400	Public	0	0	5002	Other	0
1006	Temporary shop	0	0	2005	Structure	0	0	3401	Commercial	0	0	5003	Other	0
1007	Building under construction	0	0	2006	Other	0	0	3500	Drainage	0	0	5004	Other	0
1008	Factory	0	0	2007	Other	0	0	3600	Other	0	0	5005	Other	0
1009	Public station	0	0	2008	Other	0	0	3700	MM post	0	0	5006	Other	0
1010	Public office	0	0	2009	Other	0	0	3800	Other	0	0	5007	Other	0
1011	School public	0	0	2010	Other	0	0	3900	Other	0	0	5008	Other	0
1012	Public private	0	0	2011	Other	0	0	4000	Other	0	0	5009	Other	0
1013	Market	0	0	2012	Other	0	0	4100	Other	0	0	5010	Other	0
1014	Health center	0	0	2013	Other	0	0	4200	Other	0	0	5011	Other	0
1015	Public post	0	0	2014	Other	0	0	4300	Other	0	0	5012	Other	0
1016	Other	0	0	2015	Other	0	0	4400	Other	0	0	5013	Other	0
Total		0	0	Total		0	0	Total		0	0	Total		0
2. Summary of Classification														
No.	Block Name	1	2	3	4	5	6							
1	Block 1	x												
2	Block 2	x												
3	Block 3	x												
4	Block 4	x												
5	Block 5	x												
6	Block 6	x												
7	Block 7	x												
8	Block 8	x												
9	Block 9	x												
10	Block 10	x												
11	Block 11	x												
12	Block 12	x												
13	Block 13	x												
14	Block 14	x												
15	Block 15	x												
16	Block 16	x												
17	Block 17	x												
18	Block 18	x												
19	Block 19	x												
20	Block 20	x												
Total		2	1	2	1	4	2							
3. Location Map														

Figure 2-12 Activities concerned in the RMM and RMD

2.3 Illegal Encroachment Prevention (IEP)

2.3.1 Approaches

ROW management map is developed using the data collection activities from CSI. Based on densities of ROW encroachments pointed on the RMM, ROW areas shall be classified into populated, potential and non-dense areas. IEP shall be implemented properly according to classification of areas on ROW management map in order not to allow any illegal or inappropriate land uses in ROW.

IEP approaches aim to prevent new encroachment in the ROW and to regulate temporary use of ROW with permission so as to manage and maintain the land secured for road development.

Approaches are mainly divided into hard and soft approaches.

Table 2-4 Hard and Soft Approaches

Hard Approach			Soft Approach		
New Road Design	Installing Facilities		Permission and Registration	Monitoring and Intervention	Raising awareness
Constructing sub-road as ROW boundary	Pole	Signboard	ROW registration Access road permit	Appealing to the court Collaborating with local authorities	Local people High school and university students
Road from the edge of ROW boundary and keep empty space in the middle	Fence	Growing Tree	ROW marking plate	Regular patrol activities	Local governmental official
Digging channels as ROW boundary	Highlighting color on tile				

According to Law on Road, MPWT is the road control authority in charge of construction, maintenance and management of all national roads in Cambodia. Also, Road Infrastructure Department (RID) of MPWT is a main actor in charge of ROW management of all national roads. Additionally, there are also other agencies/ministries involved in the ROW management such as Ministry of Interior, Ministry of Land Management, Urban Planning and Construction and Ministry of Education, Youth and Sport. MPWT is responsible for coordination, implementation, maintenance of the necessary records on the ROW and expenditure management and preparation of budgetary provisions.

2.3.2 Roles and Division of Work

The roles and activities for hard and soft approaches are outlined in the following table. The responsible authorities are MPWT, DPWT, MLMUPC and local authorities. RID & DPWT should understand roles and collaborate with each organization to collect basic information through the surveys.

Table 2-5 Activities and Division of Work

IEP HARD APPROACH ROLE						IEP SOFT APPROACH ROLE					
ITEM	MPWT	DPWT	Local Authority	MLMUPC	OTHER	ITEM	MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification	✓					Classification	✓				
Raise awareness (PCM)						1) Citizen	✓	✓	✓		
						2) High school / University	✓				✓
						3) Local government office	✓	✓	✓	✓	
Monitoring & intervention						1) Regular patrol	✓	✓	✓		
						2) Collaborating w/ local authorities	✓	✓	✓		
						3) Appealing to court	✓	✓	✓		✓
Permission & Registration						1) ROW permit	✓	✓	✓		
						2) ROW registration	✓	✓	✓	✓	
						3) Access road permit	✓	✓	✓		✓
Supervision						1) Record of "raising awareness"	✓	✓			
						2) Record of "Monitoring"	✓	✓			
						3) Record of "Permission"	✓	✓			

Raising awareness

Relevant organizations such as MPWT, DPWT and Local Authority should collaborate to provide "Consultation Meeting" to local people and relevant governments to ensure better understanding of ROW, and build good relationship

- Raising local people's awareness

- Raising relevant government officials' awareness
- Integrating ROW concept into school curriculum (To be Considered)

Monitoring and Intervention

MPWT and DPWT should collaborate to implement “Patrol” to collect the evidence from resident and to provide “Warning” for Illegal Encroachment.

- Patrol
- Administrative Guidance (To be Considered)

2.3.3 Update current status by patrol

When the implementation of “Patrol” by MPWT and/or DPWT, it should be utilized TabletApp to update/record current status, resident information and the evidence into RMD. Especially, permission document from other authorities should be taken by photo into the RMD. These patrol and information update are informative to consider proceeding law enforcement for illegal encroachment.

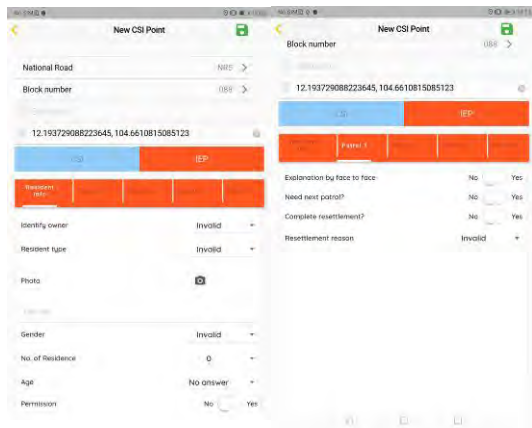


Figure 2-13 Data Input Interface for IEP

2.3.4 Report of IEP patrol

As the results of patrol, there are updated details of each CSI point such as resident information, building structure and so on into RMD. The results of patrol including number of encroachment and classification is the followings. The result will be shown by commune in the province. Also, the result can be produced Excel format from RMD in order to consider development plan such as rough estimation for resettlement cost. For further functions, original RMM/RMD would be edited by QGIS to produce the result of IEP approaches to make visualized RMM such as to make some colors to blocks which selected by priority area.

Also, Report functions of WebGIS following IEP patrol have been provided as the following 3 types.

- **Individual Report:** The individual report of each encroachment will be produced by PDF in order to share from MPWT to DPWT as the result of patrol.

IEP Survey form on Permission of ROW Land Use (Paper-based survey)

Record to Database: IEP-Resident info

Type of Respondent: Owner, Resident, Employee, Others

Gender of Respondent: Male, Female

Age: 20-30, 30-40, 40-50, 50-60, 60+ or 70+ (Age in years)

Q1: Are there any permission of ROW Land Use with you?

Q2: If Yes (with Document), please let us to scan it for us?

Q3: If Yes, what type of ROW Land Use Permits do you have?

Q4: If Yes, who gave a permission?

Q5: If Yes, when did you take a permission?

Need Issue Report: Yes, No

Next Patrol in after: 7days, 15days, 30days

Repetitive Reason: Construction-From DWPT, Receive Compensation system, Other

Figure 2-14 Individual Report for IEP patrol

- Summary Report:** After the patrol, MPWT should summarize collected information/data in order to consider a plan for IEP approaches such as to select priority along surveyed area. WebGIS equipped some functions which are Report and Data Analysis and Classification. The detail of each function is described as the below.

IEP Result/Summary of Illegal Encroachment											
Province		District		Commune		Classification		Next IEP Approach			
1. Summary of Encroachment											
code	Type of Encroachment	Qty	Area (sq. m)	code	Type of Encroachment	Qty	Area (sq. m)	code	Type of Encroachment	Qty	Area (sq. m)
1000	Building	0	0	2001	Approach to build	0	0	3100	Overboard outlet	0	0
1001	Residence	0	0	2003	Access Road	0	0	3101	Overboard private	0	0
1002	Residence & Commercial	0	0	2004	Land filling	0	0	3200	Street light	0	0
1003	Commercial	0	0	2005	Open Area	0	0	3300	Post	0	0
1004	Shop	0	0	2006	Barbecue	0	0	3301	Post	0	0
1005	Temporary shop	0	0	2200	Other	0	0	3400	Cemetery	0	0
1006	Building under construction	0	0					3500	Private drainage	0	0
1007	Factory	0	0					3600	Well	0	0
1008	Petro station	0	0					3700	TM post	0	0
1009	Public office	0	0					3800	ROW pole	0	0
1010	Temple public	0	0					3801	OTI pole	0	0
1011	School private	0	0					3900	Control point (ICCP)	0	0
1012	Pagoda	0	0					3910	Benchmark (BM)	0	0
1013	Health center	0	0					3920	Other	0	0
1014	Mobile cart	0	0								
1015	Other	0	0								
	Total	0	0								
2. Summary of Classification											
No	Block Name	1	2	3	4	5	6	Criteria			
1	NH005_KPC001_0123	x						Criteria for Block			
2	NH005_KPC001_0124	x						Criteria-1: X-X building in a block			
3	NH005_KPC001_0125	x						Criteria-2: X-X building in a block			
4	NH005_KPC001_0126	x						Criteria-3: X-X building in a block			
5	NH005_KPC001_0127	x						Criteria-4: X-X building in a block			
6	NH005_KPC001_0128	x						Criteria-5: X-X building in a block			
7	NH005_KPC001_0129		x					Criteria-6: X-X building in a block			
8	NH005_KPC001_0130			x				Classification for Commune			
9	NH005_KPC001_0131				x			A. Provincial Road			
10	NH005_KPC001_0132					x		B. Non-Dense Green			
11	NH005_KPC001_0133						x	C. Urban Blue			
12	NH005_KPC001_0134										
13	NH005_KPC001_0135						x				
14	NH005_KPC001_0136										
15	NH005_KPC001_0137										
16	NH005_KPC001_0138						x				
17	NH005_KPC001_0139										
18	NH005_KPC001_0140										
19	NH005_KPC001_0141										
20	NH005_KPC001_0142										
	Total	2	3	2	5	4	2				
3. Location Map											

Figure 2-15 Summary report for the result of IEP patrol

- Filter:** The filter will sort by selected key items to display on WebGIS in order to explain and show current condition of encroachment to management level of MPWT.

No	ID Mark	Type(Code+T)	Eave	Gate	Raised	Paved	with Drainage	Distance	X	Y	Area(sqm)	Current Permission	Receive Application Form/Satchart(Submissiondate)	Surveyor	Survey Date	Status	Action	
1	NH005_KPC001_0123	1001/Residence	x	x	x	x	x	00m	123.123	123.123	0	V/N	V/N Date	Mr. XXX	Date	Updated		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Figure 2-16 Filter function on WebGIS

J3-5: Budget Plan for RMS Implementation

Budget Plan
for Right of Way Management

June 2019

1. BASIC POLICY

1.1 Background

Right of Way (ROW) management is very important to secure the national and road facilities and maintain the road function. However, ROW management is not adequate in Cambodia and illegal houses and structures are set in ROW area. Cambodian government plans the road widening construction on the national road (NR) and needs to compensate the land and some structure in ROW area.

Resettlement Action Plan (RAP) on the NR No.5 was prepared and shows that total resettlement cost in NR No.5 (South, Middle and North) is more than USD 20,000,000. And, Structure (remove) cost is estimated approx. USD 12,000,000 in total area.

Table 1.1 Resettlement Cost based on RAP

Section	Length (km)	AHs	Total Cost	Cost/km	Cost/AHs
South	146.7	3,368	\$8,882,712		
Middle	174.8	2,422	\$6,888,815		
North	104.7	2,265	\$4,999,992		
Total	426.2	8,055	\$20,771,519		
Structure remove			\$11,993,000 (57.7% of total cost)	\$28,000	\$1,500

Based on above resettlement cost, if Cambodian government implements the resettlement on the 1 digit NR which length is 2,254km, its structure remove cost is estimated more than USD 63,000,000 with the unit cost of NR No.5.

Table 1.2 Resettlement Cost of 1 digit NR

Case	Length	AHs	Cost
All 1 digit NR	2,254km	43,000 households	USD 63,426,000

In addition, illegal households have been increasing along NR in recent year. I case ROW management is not implemented adequately, illegal households keep increasing and resettlement cost also keep increasing when the road widening construction starts. Annual rate of illegal households rising is estimated 5 % according to counting on NR No. 5 in Kampong Chhnang Province from google map. In case this rate of 5% keeps, structure removing cost will be more than USD 100,000,000 higher in 20 years comparing with case of illegal households rising is not occurs.

Moreover, price level also keeps rising in Cambodia in recent year so that structure removing cost is estimated more than USD 107,000,000 higher in 20 years with considering the price rising rate of 1.6% (as of January 2019).

Table 1.3 Estimated Resettlement Cost considering to illegal households rising and price rising

Year	Base Year	3Y later	5Y later	10Y later	20Y later
Considering to Illegal households rising rate: Approx. 5%					
AHs	43,000	49,000	54,000	69,000	112,000

Year	Base Year	3Y later	5Y later	10Y later	20Y later
Cost	\$ 63,117,000	\$ 73,066,000	\$ 80,555,000	\$ 102,811,000	\$ 167,468,000
Difference from base year	-	\$ 9,949,000	\$ 17,438,000	\$ 39,694,000	\$ 104,351,000
Considering to Price rising rate: 1.6% / year					
Cost	\$ 63,117,000	\$ 74,235,000	\$ 81,844,000	\$ 104,456,000	\$ 170,147,000
Difference from base year	-	\$ 11,118,000	\$ 18,727,000	\$ 41,339,000	\$ 107,030,000

Therefore, much more cost for resettlement will be required in the future if ROW management is not changed so that adequate ROW management is required.

1.2 Purpose of the budget plan

Budget for the ROW management is prepared by Road Infrastructure Department (RID) in MPWT every year. However, the budget is not enough for the activities of ROW management and distribution of that cost is required for appropriate ROW management.

Budget plan for the ROW management was prepared for the following purpose.

- To classify the cost of appropriate ROW management
- To contribute the budget requirement for ROW management
- To secure the future budget for ROW management

1.3 Target Year

MPWT's budget is planned for the three (3) year period. (Actually, budget requirement in 2019 was for 3years between 2020 and 2022.

Thus, budget plan aims the three year plan.

2. PROJECT DESCRIPTION

2.1 Output of the Project

Through the pilot project for ROW management, method of Current Status Identification (CSI) and Illegal Encroachment Prevention (IEP) was inspected and secured.

(1) CSI

CSI focuses on data collection related to situation of right of way along national roads and provincial roads across the country in order to create right of way maps and database as baseline for effective right of way management. Main contents of CSI are UAV survey, field survey and office work. Detail information of each task is described in Table 1 1.

Table 2.1 Main Contents of CSI

Main Implementation Items		Contents
UAV Survey	1) Arrange for UAV Flight Permission	Arrange for the UAV flight by getting permission from DPWT as well as other local government and acquiring a UAV usage permit
	2) Prepare for UAV Flight	Create UAV flight plan based on UAV survey manual and prepare necessary equipment related to UAV flight as well as a notice board to raise public awareness about ROW
	3) Implement UAV Survey	Take aerial images by using UAV. In addition, during the UAV survey install the notice board so that passers can see the picture of activity related to ROW
	4) Supervision	Audit time schedule and quality and take care safety control
Field Survey	1) Take Photos of Facilities	Take photos of facilities from the ground and count existing facilities which is difficult to identify the exact number of them.
	2) Update data on the tablets	Update data on the tablets
	3) Survey other things	Survey other things based on items to be collected / recorded for RMS and discussions by taskforce
Office Work	1) Data Processing (Ortho, GIS and DB)	Create the orthomosaic (Orhto) from aerial images and make raster data and attribute information on GIS. Also build up and update data base (DB).
	2) Finalization	Finalize RMM after field survey are implemented

(2) IEP

Following the results from Current Status Identification (CSI), Illegal Encroachment Prevention approaches (IEP) shall be implemented in order not to allow any illegal/inappropriate use lands in ROW.

The approaches have been classified into hard approaches and soft approaches for both existing project and project in future. Illegal encroachment prevention approaches are summarized as below:

Table 2.2 Main Contents of IEP

		Approaches for IEP	
Activities for Existing project	Soft approaches	Raising awareness (Education)	Raising local people's awareness on ROW
			Integrating ROW concept into school curriculum (high-school student or university student)
			Raising relevant governmental officials' awareness on ROW management
		Monitoring and Control/ Intervention	Promoting regular patrol activities to prevent ROW encroachment (Monitoring)
			Promoting collaborative works among local police, local authorities and DPWT (control or intervention)
			Appealing to the court
		Registration / Application for ROW Usage	Regarding application for construction permit should be done by public works office of DPWT and cadastral office of DLMUPC, not cadastral office alone.
			Building construction permit
			Land filling permit
	ROW registration		
	Hard approaches	Installing facilities	Installing ROW poles (be long enough)
			Installing ROW signboards in each commune office
			Installing fence for COI/ROW in urban area
Growing tree as ROW boundary in rural area			
Install Tile in different color on boundary belong Side walk (line boundary)			
Activities for future project	New design/ construction	Digging channel as ROW boundary	
		Road construction starts from the edge of ROW boundary and keeping empty space around central line	
		Constructing sub-roads as ROW boundary	

2.2 Advantage of ROW Management

Illegal occupation of state land makes implementation of resettlement procedure much more complicated and that management doesn't work effectively. And, as mentioned resettlement cost will be more higher in the future without adequate ROW management.

Adequate ROW management can

- minimize the resettlement cost
- read to smooth project implementation related to the road construction without delay of land issue.

CSI and IEP activities contribute to prevent the illegal encroachment to the ROW on national road and to reduce the resettlement in the future. Each advantage of CSI and IEP is as follows.

■ CSI

- Data can be stocked and used as "Evidences" of current status on ROW boundary

- Patrol, Installation of ROW pole and Permission for temporary land use etc. can be controlled by CSI
- Accountability is established by showing maps
- IEP
 - Communication with residents can be established by PCM and Patrol etc.
 - Encroachment can be prevented physically
 - Road safety can be secured secondarily

3. BASIC COST OF ROW MANAGEMENT

3.1 CSI Cost

CSI activities use the drone and that drone is classified to three types, which are propeller type, purchased fixed wing type and leased fixed wing type. Labor man-month and cost for CSI activities are estimated as follows.

(1) Man-Month for CSI activities

Estimated man-month for each drone type is as follows. Man-month of propeller type UAV, FS and office work are actual value demonstrated in the Pilot Project and speed of fix wing UAV is estimated as 8km/day. Team of UAV is basically set as 2 persons for 1 team. Progress.

Table 3.1 Man-Month per 100km progress for CSI

CSI task	MM/100km each Drone types		
	Propeller	Fixed wing (purchased)	Fixed wing (rental)
UAV	2Man x 1.80Month	2Man x 0.57Month	Outsource: 2Man x 0.57Month
FS	3Man x 3.13Month	3Man x 3.13Month	MPWT: 3Man x 3.13Month
Office	2Man x 2.64Month	2Man x 1.32Month	MPWT: 2Man x 1.32Month
Total	7Man x 2.61Month	7Man x 1.88Month	Outsource: 2Man x 0.57Month MPWT: 5Man x 2.40Month

(2) Unit Cost

Progress speed, labor MM and unit cost for CSI are estimated as follows. Progress for 1 year of 2,100km equals to estimated progress with using fixed wing drone. Outsource means working implemented by the contractor in Cambodia in Pilot Project.

Table 3.2 Unit cost of CSI based on the Pilot Project

Drone type		Propeller	Fixed wing (purchased)	Fixed wing (rental)
Progress for 1 year		2,100 km	2,100 km	2,100 km
Initial cost		\$ 100,000	\$ 82,000	\$ 62,000
Labor MM for 1 year (staff x month)	UAV	75.4MM (8 x 9.4)	24.0MM (2 x 12.0)	Outsource
	FS	197.1MM (17 x 11.6)	198.3MM (17 x 11.7)	198.3MM (17 x 11.7)
	Office	110.6MM (10 x 11.1)	55.6MM (5 x 11.1)	55.6MM (5 x 11.1)
	Total	383.1MM	277.9MM	253.9MM
Outsource	Labor	\$ 310 / km	\$ 230 / km	\$ 280 / km
	Cost for progress	\$ 749,000 (\$360/km)	\$ 558,000 (\$260/km)	\$ 643,000 (\$300/km)

(3) Recommendation Type of Drone

Recommendation drone in ROW management used by MPWT is “Rental Fixed Wing Drone” according to following reasons.

- Drone working speed of fixed wing drone is much higher than propeller drone and it is enough to cover the area of 1 digit and 2 digit NR.
- In case of rental drone, MPWT doesn't need to manage and maintain their equipment

- Initial cost of rental drone is cheaper than purchased drone
- MPWT's working can be reduced by outsource

3.2 IEP Cost

IEP activities are classified in 2 approaches, Soft and Hard. Soft approaches are Public awareness through the Public Consultation Meeting (PCM) and Patrol. Hard approaches are some construction work such as installation of ROW pole. Cost for these approaches is estimated according to the construction work by contractor in Cambodia.

Unit cost based on the actual cost in the Pilot Project is as follows.

Table 3.3 Unit Cost for IEP approaches

Approaches		Cost / km (both side)	Remarks
Soft	PCM	\$ 2,000	1 times
	Patrol	\$ 10	1 time/week=50 times/year
Hard	ROW Pole	\$ 1,320	1 pole/100m
	Fence for encroachment prevention	\$ 55,080	
	ROW Signboard	\$ 779	1 board/2km
	ROW marking plate	\$ 2,640	1 plate/100m
	Fence for pedestrian prevention	\$ 80,520	
	Curb	\$ 64,300	
	Growing Tree	\$ 15,840	1 tree/10m

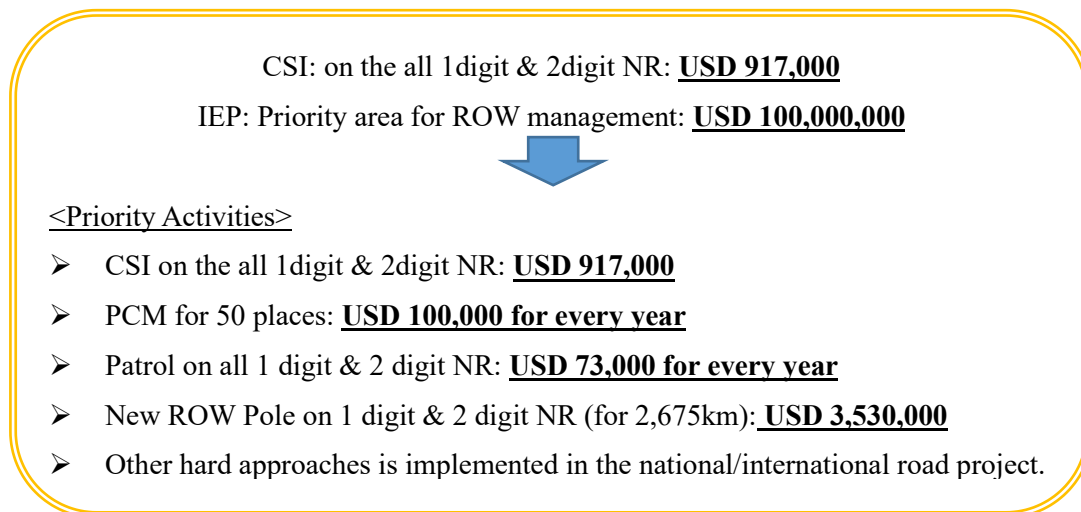
4. ACTION PLAN

4.1 Overall Goal

Overall goal for the future ROW management is set as CSI and IEP are implemented on the all 1 digit and 2 digit NR which total length is 7,260km.

That cost is estimated more than USD 100,000,000. This cost is cheaper than rising cost for resettlement.

In this overall goal, priority activities are CSI activities, PCM, Patrol on the all 1 digit and 2 digit NR and installation of new ROW Pole. ROW pole is not installed for 357km on 1 digit NR and for 2,318km on 2 digit NR yet, so that installation of ROW pole is also priority to identify the ROW boundary.



To achieve above overall goal, following three phases are set.

- CSI with rental fixed wing drone is implemented on the all 1 digit and 2 digit NR except NR No.5, which total length is 6,850km in 6 years.
- PCM and Patrol is implemented on the all 1 digit and 2 digit NR which length is 7,260km.
- All ROW Pole is installed on 1 digit and 2 digit NR in 9 years

	1 st phase (1Y~3Y)	2 nd phase (4Y~6Y)	3 rd phase (7Y~9Y)
CSI	All 1 digit & 2 digit NR		Map update
PCM	50 places/year	50 places/year	50 places/year
Patrol	All 1 digit & 2 digit NR	All 1 digit & 2 digit NR	All 1 digit & 2 digit NR
ROW Pole	for 150km	for 600km	for 1,925km

According to above 3 phases, total cost for each phase is as follows.

Table 4.1 Cost for 3 phase

Item		1 st phase (1Y~3Y)	2 nd phase (4Y~6Y)	3 rd phase (7Y~9Y)
CSI	Progress	3,427km	3,427km	-
	Cost	\$462,000	\$455,000	\$231,000
PCM		\$300,000	\$300,000	\$300,000

Item		1 st phase (1Y~3Y)	2 nd phase (4Y~6Y)	3 rd phase (7Y~9Y)
Patrol		\$218,000	\$218,000	\$218,000
ROW Pole	Progress	150km	600km	1,925km
	Cost	\$198,000	\$792,000	\$2,541,000
Total		\$1,179,000	\$1,766,000	\$3,291,000

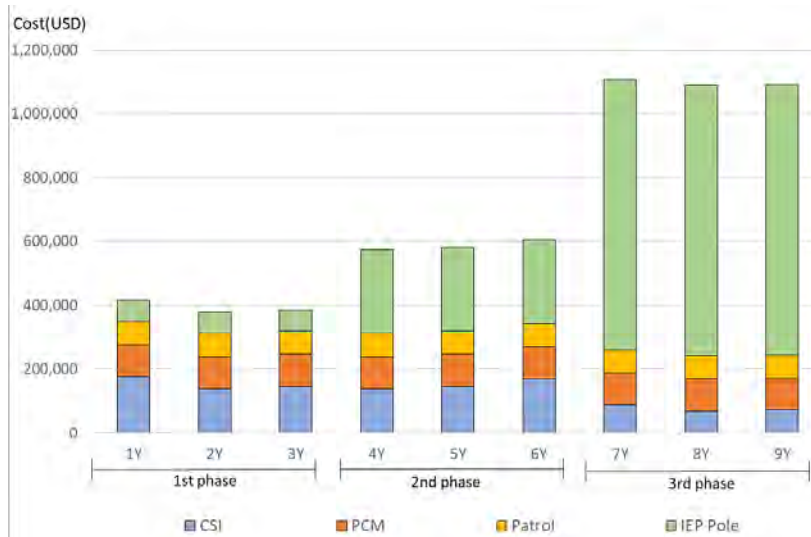


Figure 4.1 Cost for 3 phase

4.2 First Phase Target

1st Phase Target

- CSI: Half of all 1 digit & 2 digit NR: **USD 462,000**
- PCM for 50 places: **USD 100,000 for every year**
- Patrol on all 1 digit & 2 digit NR: **USD 73,000 for every year**
- New ROW Pole for 150km is installed: **USD 198,000**

Breakdown of the 1st phase (first 3 years) is as follows. Budget for 1 year is estimated as approx. USD 350,000 and 3 years total is around USD 1,000,000.

Table 4.2 First Phase Budget

Approaches		1 st year	2 nd year	3 rd year	3 years total	Remarks
CSI	Progress	1,142km	1,142km	1,142km	3,427km	Half of 1 & 2 digit NR
	UAV	\$111,600	\$109,000	\$111,400	\$332,000	(Outsource) 38.9MM
	Office	\$35,300	\$4,400	\$4,400	\$44,100	90.3MM
	FS	\$30,200	\$25,900	\$30,200	\$86,300	321.7MM
	Total	\$177,000	\$139,000	\$146,000	\$462,000	

Approaches		1 st year	2 nd year	3 rd year	3 years total	Remarks
IEP	PCM	\$100,000	\$100,000	\$100,000	\$300,000	50 places / year
	Patrol	\$72,600	\$72,600	\$72,600	\$217,800	All 1 & 2 digit NR
	ROW Pole	\$66,000	\$66,000	\$66,000	\$198,000	For 150 km
	Total	\$239,000	\$239,000	\$239,000	\$717,000	
Total		\$416,000	\$378,000	\$385,000	\$1,179,000	

JICA Expert Reports

J4: ROW Management-Pilot Project

J4-1: Pilot Project Implementation Plan

J4-2: PTF Activity Record

J4-3: Training Records on Pilot Project

J4-1: Pilot Project Implementation Plan

EXPERT REPORT

OF THE PROJECT

FOR CAPACITY ENHANCEMENT

ON ENVIRONMENTAL AND SOCIAL

CONSIDERATIONS

IN IMPLEMENTING AGENCY

IN ROAD SECTOR

IN THE KINGDOM OF CAMBODIA

~ Pilot Project Implementation Plan ~

MAY 2018

CTI Engineering International Co., Ltd. (CTII)
Environment and Social Infrastructure Consultant Co., Ltd. (ESIC)
Hanshin Expressway Company Limited (HEX)

JICA EXPERT REPORT
 OF THE PROJECT FOR CAPACITY ENHANCEMENT
 ON ENVIRONMENTAL AND SOCIAL CONSIDERATIONS IN IMPLEMENTING AGENCY
 IN ROAD SECTOR IN THE KINGDOM OF CAMBODIA
 ~ Pilot Project Implementation Plan ~

TABLE OF CONTENTS

Chapter 1	Summary of Pilot Project Implementation Plan.....	1
	1.1 Purpose	1
	1.2 Policy.....	1
	1.3 Implementation Period	1
	1.4 Target Area	1
	1.5 Main Work.....	2
	1.6 Pilot Project Schedule	2
	1.7 Work Flow of Main work	3
	1.8 Output of Pilot Project.....	5
	1.9 PTF member	6
	1.10 Equipment List	7
Chapter 2	CSI Implementation Plan	8
	2.1 Outline Contents.....	8
	2.2 CSI Implementation Member	11
	2.3 Calculation of UAV Survey time	13
	2.4 Items to be collected / recorded for RMS.....	17
	2.5 Safety Management.....	19
Chapter 3	IEP Implementation Plan.....	20
	3.1 Outline Contents.....	20
Chapter 4	PTF Activity	25
	4.1 PTF Activity Policy	25
	4.2 PTF Activity for CSI	25
	4.3 PTF Activity for IEP.....	27

Chapter 1 Summary of Pilot Project Implementation Plan

1.1 Purpose

Pilot Project Implementation Plan is established to achieve the following purpose;

- 1) To implement the Pilot Project of Current Status Identification (CSI) smoothly
- 2) To implement the Pilot Project of Illegal Encroachment Prevention (IEP) smoothly

1.2 Policy

In order to achieve the above purposes, policy is shown as follow;

- 1) To draft reference materials to consider what to be able to do for CSI and IEP
- 2) To be obvious the members and their role for the Pilot Project of CSI and IEP

1.3 Implementation Period

The Pilot Project will be carried out from late May 2018 until late August 2019

1.4 Target Area

The Pilot Project will be carried out along the National Road No. 5 as already approved in the Second Joint Coordinating Committee (2nd JCC) meeting in four Provinces (Kampong Chhnang, Pursat, Battambang and Banteay Meanchey)

CSI on the Pilot Project will commence from Start Point shown in **Figure 1.1** in Kampong Chhnang.

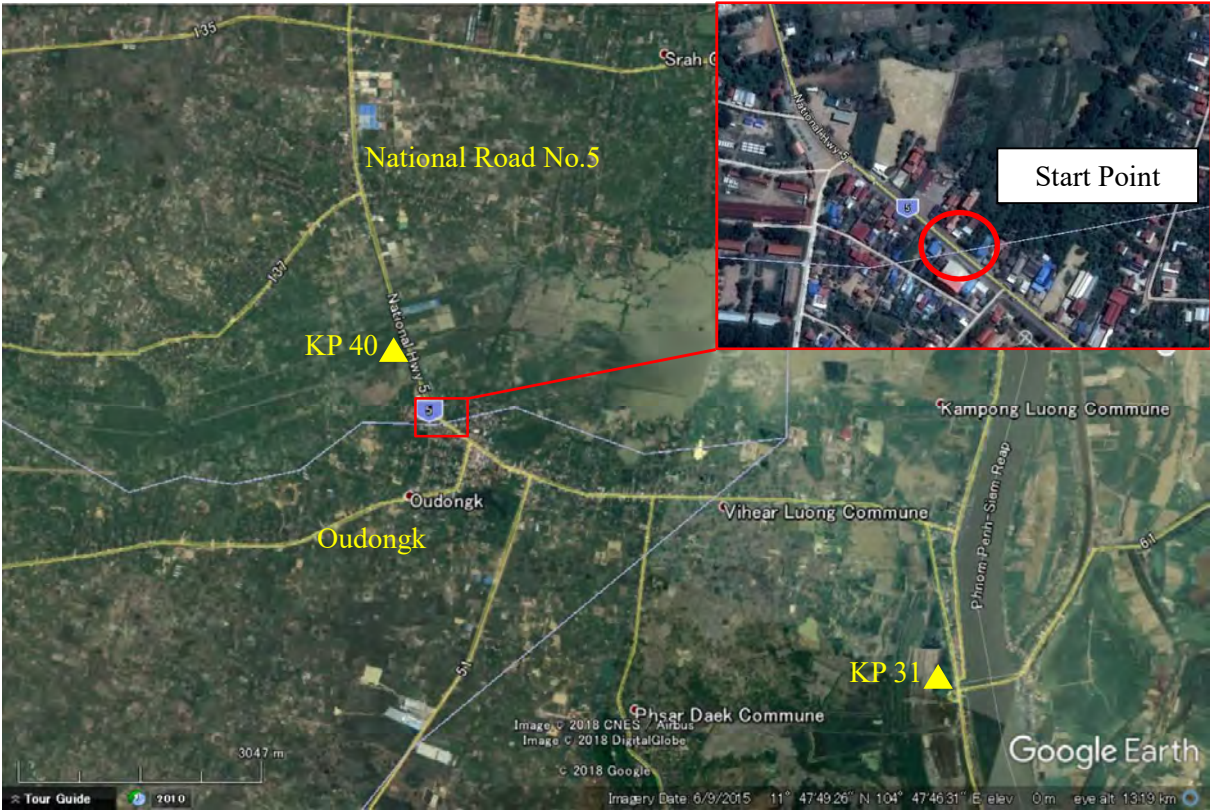


Figure 1.1 Start Point of CSI on the Pilot Project

1.5 Main Work

Pilot Project is planned to implement the following main works of CSI. For IEP, what to implement as IEP will be discussed and decided on the way to proceed with CSI.

Table 1-1 Main Work of Pilot Project

Item	Main Work	Remarks	
CSI	Kick-off Meeting (Kick-off)		
	UAV Survey (UAV)		
	Field Survey (FS)		
	Office Work (GIS)		
IEP	Dissemination	PCM	Under review
		Leaflet Distribution	Under review
	Patrol		Under review
	Installment Structure	Role Pole	Under review
		Sign Board	Under review
Fence		Under review	

1.6 Pilot Project Schedule

Pilot Project Schedule is shown in Table 1-2.

Table 1-2 Pilot Project Implementation Schedule (tentative)

Year		2018										2019								
Month		4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	
Season		Dry-season		Rainy Season						Dry-season										
CSI	Kick-off			KAMPONG CHHNANG																
						PURSAT														
									BATTAMBANG											
												BANTEAY MEANCHEY								
	UAV		KAMPONG CHHNANG																	
					PURSAT															
									BATTAMBANG											
												BANTEAY MEANCHEY								
	FS		KAMPONG CHHNANG																	
						PURSAT														
										BATTAMBANG										
												BANTEAY MEANCHEY								
GIS		KAMPONG CHHNANG																		
					PURSAT															
									BATTAMBANG											
											BANTEAY MEANCHEY									
IEP	PCM																			
	Patrol																			

TOT (Training of Trainer) will be conducted from Jul, to Sep. 2019

IEP will be conducted from Nov, 2018 to Aug, 2019

Plan
 Actual

1.7 Work Flow of Main work

Pilot Project is planned to implement based on the following work flow.

1.7.1 CSI

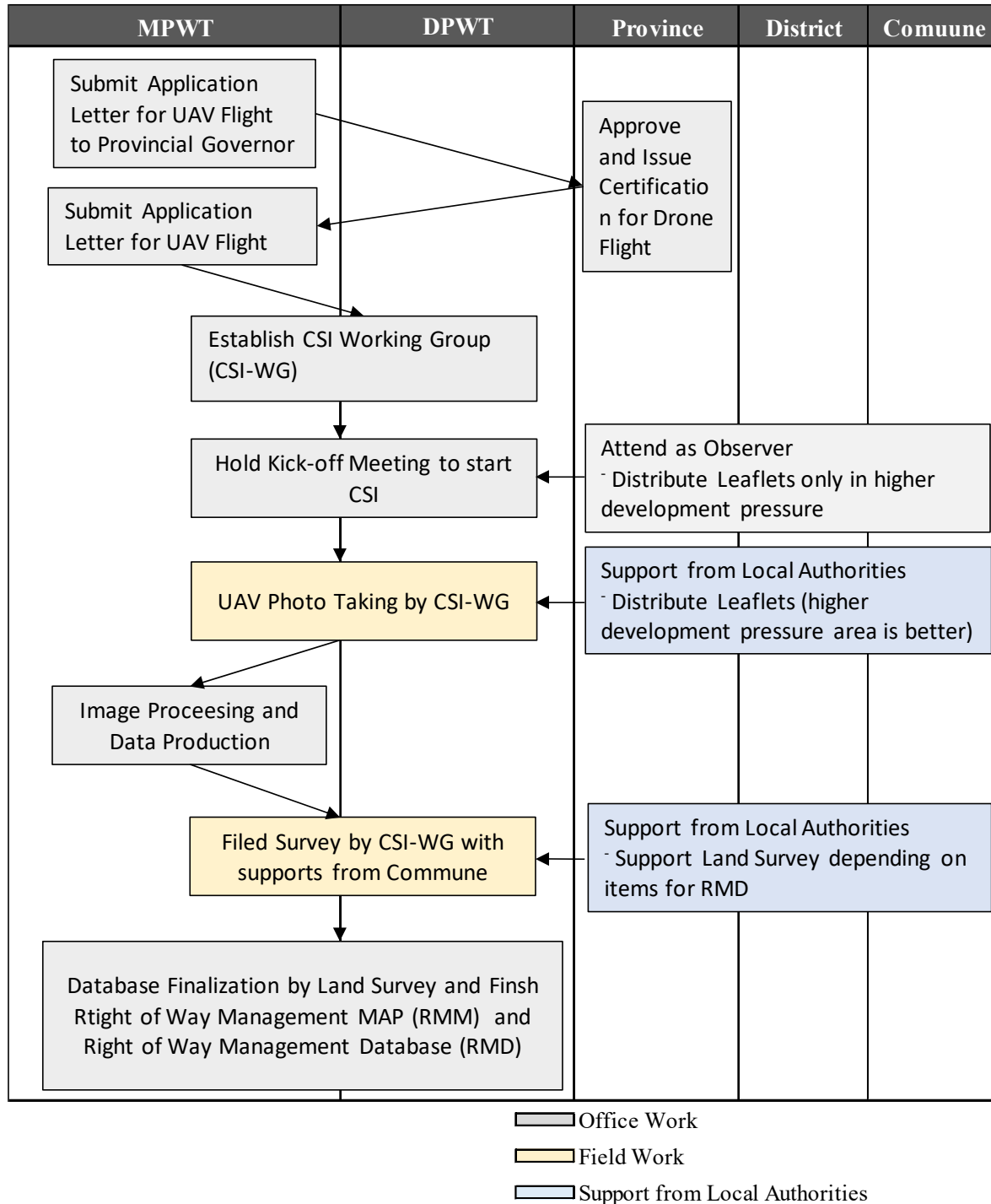


Figure 1.2 CSI Work Flow

1.7.2 IEP (PCM)

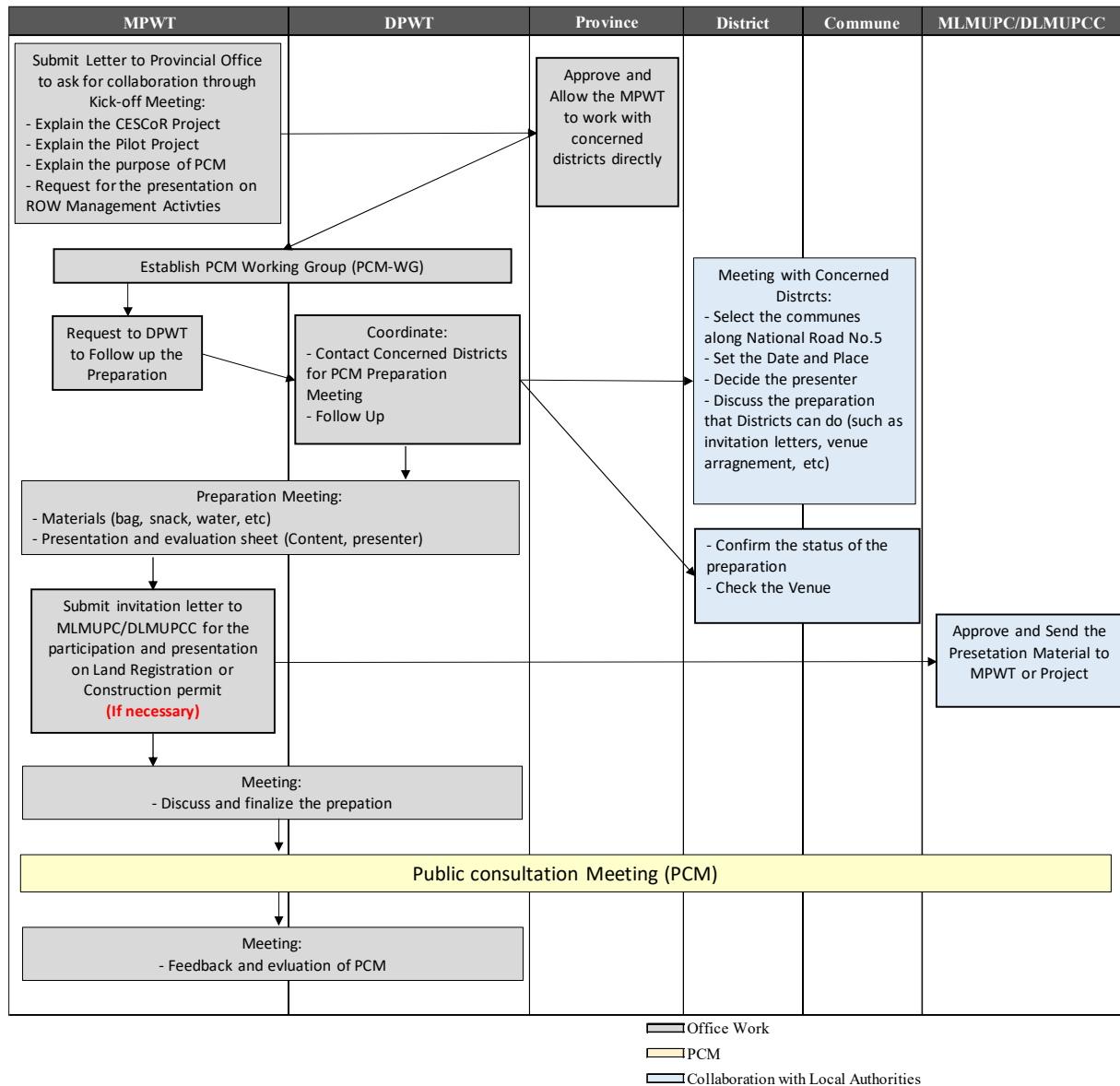


Figure 1.3 PCM Work Flow

1.7.3 IEP (Patrol)

It is under review.

1.8 Output of Pilot Project

1.8.1 Documentation of Pilot Project Implementation Plan

Pilot Project Implementation Plan is documented. It will become reference materials for future CSI and IEP after this project ended.

1.8.2 Development of Draft RMM and RMD on Target Area

Draft RMM on target area will be created.

1.8.3 Documentation of Manuals for CSI and IEP

Manuals for CSI are drafted as the following. Through the pilot project, these manuals will be updated and finalized.

For IEP, manuals will be drafted during the pilot project.

Manual 1 CSI (CURRENT SITUATION IDENTIFICATION) WORK REGULATION (Draft)

Manual 2 AERIAL PHOTOGRAPHY MANUAL (Draft)

Manual 3 GROUND CONTROL POINT SURVEY MANUAL (Draft)

Manual 4 IMAGE PROCESSING MANUAL (Draft)

Manual 5 DATA PRODUCTION MANUAL (Draft)

Manual 6 FIELD SURVEY MANUAL (Draft)

Manual 7 DATA FINALIZATION MANUAL (Draft)

1.8.4 Consideration of Main Role for CSI implementation between MPWT, DPWT and Local Authorities

Main Role of CSI and IEP among MPWT, DPWT and Local Authorities are discussed and updated during the Pilot Project.

Table 1-3 Image of Main Role for CSI implementation between MPWT and DPWT

			MPWT	DPWT	Province	District	Commune
C S I	UAV Survey	1) Arrange for UAV Flight Permission	X		X		
		2) Prepare for UAV Flight		X			
		3) Implement UAV Survey		X			
		4) Supervision	X				
	Field Survey	1) Arrange for Field Survey Permission	X				
		2) Record on the tablet		X			
		3) Take photos from ground		X			
		4) Supervision	X				
	GIS	1) Data Processing (Orhto, GIS and Database)	X				
	Kick Off Meeting	1) Arrange for Kick off meeting	X	X			
2) Take place Kick off meeting		X	X	X	X	X	
I E P							
	It's under view.						

1.9 PTF member

Pilot Project Task Force (PTF) members are shown in **Table 1-4**. PTF members belong to MPWT and DPWTs administer KAMPONG CHHNANG Province, PURSAT Province, BATTAMBANG Province, BANTEAY MEANCHEY Province.

Table 1-4 PTF Member

Task Force member (MPWT)
1. Mr. You Dara, Deputy Director, RID
2. Mr. Chea Samnang, Chief, ROW Management Office, RID
3. Mr. Khoun Kompheak, Chief, Traffic Safety Office, RID
4. Mr. Khai Saray, Deputy Chief, ROW Management Office, RID
5. Mr. Hay Chandara, Deputy Chief, ROW Management Office, RID
6. Mr. Kain Theara, Officer, RID
7. Mr. Long Davuth, Officer, RID
8. Mr. Sok Chandy, Officer, RID
9. Mr. Sokun Piseth, Officer, RID
10. Mr. Sao Premarak, Technical Officer, RID
11. Mr. Keat Sarun, Officer, RID
12. Mr. Sor Yilin, Deputy Director, Logistic Department
13. Mr. Sok Ly, Deputy Director, ICD
14. Mr. Von Sarom, Deputy Director ICD
15. Mr. Peang Samoeun, Deputy Chief, Administrative Office, ICD
16. Mrs Sreng Sophea, Officer, Administrative Office, ICD
17. Mrs. Eam Runthearin, Deputy Chief, Regional Cooperation Office, ICD
18. Mr. Ang Menghor, Officer, Regional Cooperation Office, ICD
19. Mr. Chea Sophanith, Deputy Chief, Bilateral Cooperation Office, ICD
20. Mrs. Oum Sokvasey, Deputy Chief, Multilateral Cooperation Office, ICD
21. Mr. Lor Vicheth, Deputy Chief, Multilateral Cooperation Office, ICD
22. Ms. Laing Sengkim, Officer, Multilateral Cooperation Office, ICD
Task Force member (DPWT)
1. Lao Prostit, Officer, DPWT Kampong Chhnang
2. Khut Khemra, Officer, DPWT Kampong Chhnang
3. Phang Dollar, Deputy Director, Public Order Office, DPWT Banteay Meanchey
4. Lang Sopheak, Senior Technical Officer, DPWT Banteay Meanchey
5. Pheng Chanchhaya, Director, Machinery Unit, DPWT Battambang
6. San Sereisith, Deputy Director, Public Works Office, DPWT Battambang
7. Thouch Raksa, Officer, Public Works Office, DPWT Battambang
8. Kang Kimchhun, Deputy Director, Public Works Office, DPWT Pursat
9. Tang Sovanna, Director, Public Works and Transport Office of Bakan District, DPWT Pursat
10. Bun Soupheng, Officer, Roads and Bridges Unit, DPWT Pursat

1.10 Equipment List

Equipment is arranged as shown in **Table 1-5**.

Table 1-5 Equipment List

Items	Specification	Qty	Remarks
Current Status Identification (CSI)			
UAV Survey			
UAV	Phantom 4 Pro	2	
Propellers	Phantom 4 model, 4 pieces /1set	4	Accessories and Spare Parts for UAV
Propellers Guard	Phantom 4 model, 4 pieces /1set	2	
Battery	Phantom 4 model, No.PH4-5870mAh-15.2V	18	
Battery Charging Hub	Phantom 4 model	6	
Tablet	Samsung Galaxy Tab A	2	
Micro SD Card	Samsung Evo 64GB	2	Accessories for UAV
Parasol		2	For Sunshine
Laptop PC	Windows 10 64 bits	1	Processing Ortho Data at site
Wind Speed Meter		2	
UAV Bag		2	
Field Survey			
Tablet	Samsung Galaxy Tab A	3	Update RMM at site
Micro SD Card	Samsung Evo 64GB	3	Accessories for Field Survey
Laser Distance Meter		3	
Office Work (Data processing)			
Software	Pix4D mapper, 1perpetual license	1	Processing Ortho Data (Aerial photo)
Server PC	Linux	1	Database Construction
Desktop PC	Windows 10 64 bits	1	UAV Data Processing for RMM at Office
Illegal Encroachment Prevention (IEP)*			

* Under review

Chapter 2 CSI Implementation Plan

2.1 Outline Contents

2.1.1 Outline Contents of CSI

Main Contents of CSI are UAV Survey, Field Survey and Office Work as shown in **Table 2-1**.

Table 2-1 Main Contents of CSI

Main Implementation Items		Contents
UAV Survey	1) Arrange for UAV Flight Permission	Arrange for the UAV Flight by getting Permission from DPWT as well as other local government and acquiring a UAV Usage permit
	2) Prepare for UAV Flight	Create UAV Flight Plan based on UAV SURVEY MANUAL and prepare necessary equipment related to UAV Flight as well as a Notice Board to raise public awareness about ROW
	3) Implement UAV Survey	Take aerial images by using UAV. In addition, during the UAV Survey install the notice board so that passers can see the picture of activity related to ROW
	4) Supervision	Audit time schedule and quality and take care safety control
Field Survey	1) Take Photos of Facilities	Take photos of facilities from the ground and count existing facilities which is difficult to identify the exact number of them.
	2) Update data on the tablets	Update data on the tablets
	3) Survey other things	Survey other things based on Items to be collected / recorded for RMS and discussions by TF
Office Work	1) Data Processing (Ortho, GIS and DB)	Create the orthomosaic (Orhto) from aerial images and make raster data and attribute information on GIS. Also build up and update Data base (DB).
	2) Finalization	Finalize RMM after field survey are implemented

2.1.2 Dissemination During CSI

CSI work aims to identify current status, but it will be a more effective manner to implement some dissemination at the same time. This is because citizens see appearance of UAV Survey and Field Survey after they understood these surveys through the dissemination.

The pilot project is going to try to distribute some materials to the citizens as dissemination related to ROW and CSI activity.

Table 2-2 Outline Contents

Dissemination	Timing	Place
Distribute materials to citizens	Before / during UAV Survey	High development pressure places such as communes nearby to a provincial capital (It assumes two communes in each province as of now)

2.1.3 UAV Survey

UAV Survey will be implemented as the following, 1) Arrange for UAV Flight Permission, 2) Prepare for UAV Flight, 3) Implement UAV Survey

- 1) Arrange for UAV Flight Permission: Arrange for the UAV Flight by getting Permission from Local Authority (Province) and acquiring a UAV Usage permit.
- 2) Prepare for UAV Flight: Create UAV Flight Plan based on UAV SURVEY MANUAL and prepare necessary equipment related to UAV Flight as well as a Notice Board to raise public awareness about ROW.
- 3) Implement UAV Survey: Take Aerial Images by using UAV. In addition, during the UAV Survey install the notice board so that passers can see the picture of activity related to ROW.

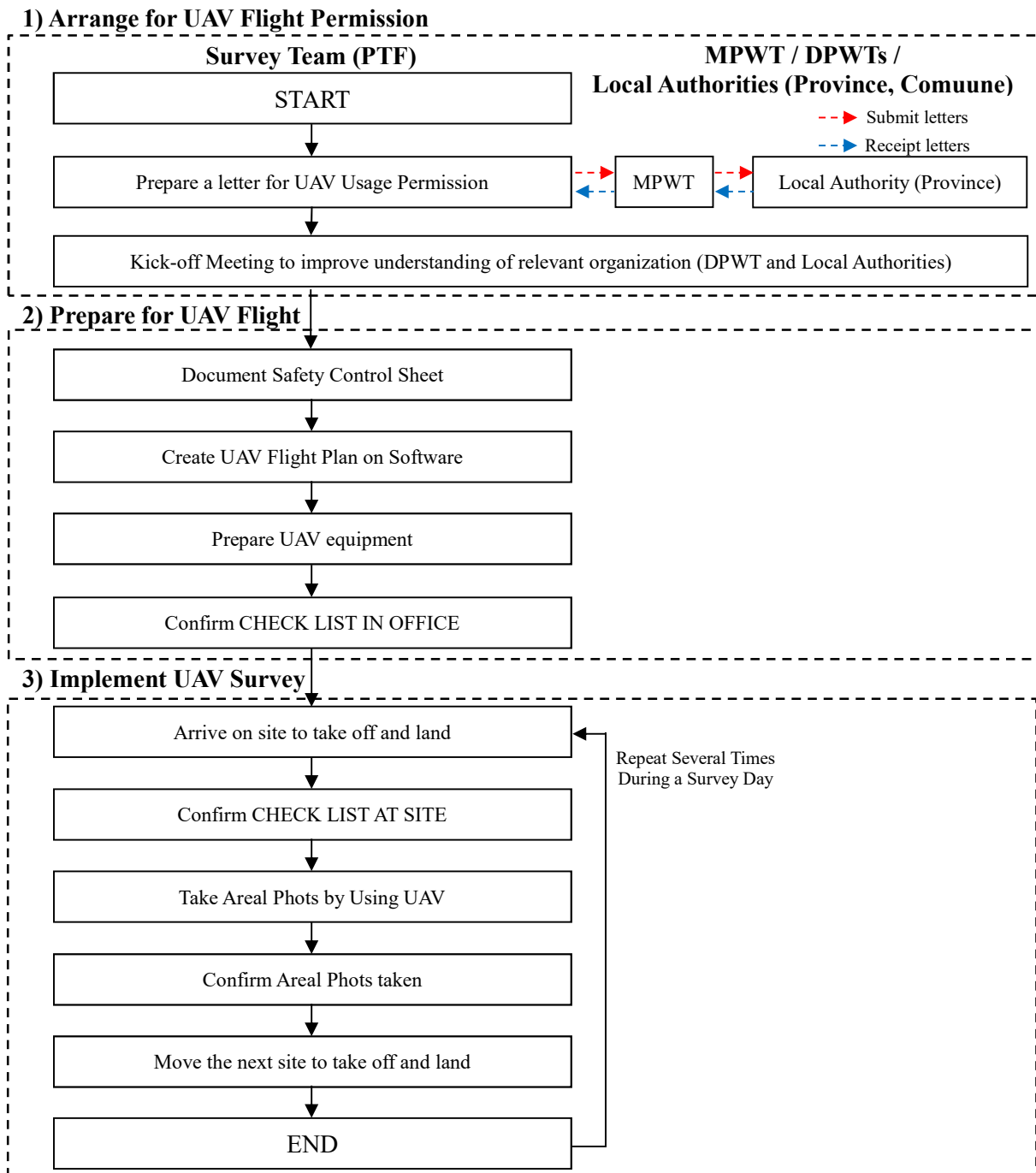


Figure 2.1 UAV Survey Work Flow

2.1.4 Field Survey

Field Survey will be implemented as the following, 1) Take Photos of Facilities, 2) Update data on the tablets, 3) Survey other things

- 1) Take Photos of Facilities: Take photos of facilities from the ground and count existing facilities which is difficult to identify the exact number of them.
- 2) Update data on the tablets: Update data on the tablets. Field Survey will clarify the number and the kind of facilities we could not identify them only on the areal pictures.
- 3) Survey other things: Survey other things based on Items to be collected / recorded for RMS and discussions in TF meetings which will be discussed and decided on the way to do CSI.

2.1.5 Office Work (Data processing)

Field Survey will be implemented as the following, 1) Data Processing (Ortho, GIS and DB), 2) Finalization

- 1) Data Processing (Ortho, GIS and DB): Create the orthomosaic (Orhto) from aerial images and make raster data and attribute information on GIS. Also build up and update Data base (DB).
- 2) Finalization: Finalize RMM after field survey are implemented.

2.2 CSI Implementation Member

2.2.1 Implementation Member

Survey Implementation members on the Pilot Project is organized as the following Table.

Table 2-3 CSI Implementation Member

No.	Title	Group	Main Role / Task (Refer to 2.2.2)
1	Project Leader (PL)	Survey Administration	(1) Overall Management (2) Arrangement for UAV Survey, Building Survey
2	UAV Leader (UAVL)	UAV Survey Group	(1) Management for UAV Survey Group (2) UAV Survey
3	UAV Operator (UAVO)		(1) UAV Survey (2) Assistance of UAV Survey
4	Field Survey Leader (FS1)	Field Survey Group	(1) Management for Office Work Group (2) Field Survey
5	Field Surveyor (FS2)		
6	Field Surveyor (FS3)		
7	GIS Operator (GIS)	Office Work Group	(1) Operation of GIS and Image Processing

* The number of members will be increased based on progress

Survey Administration

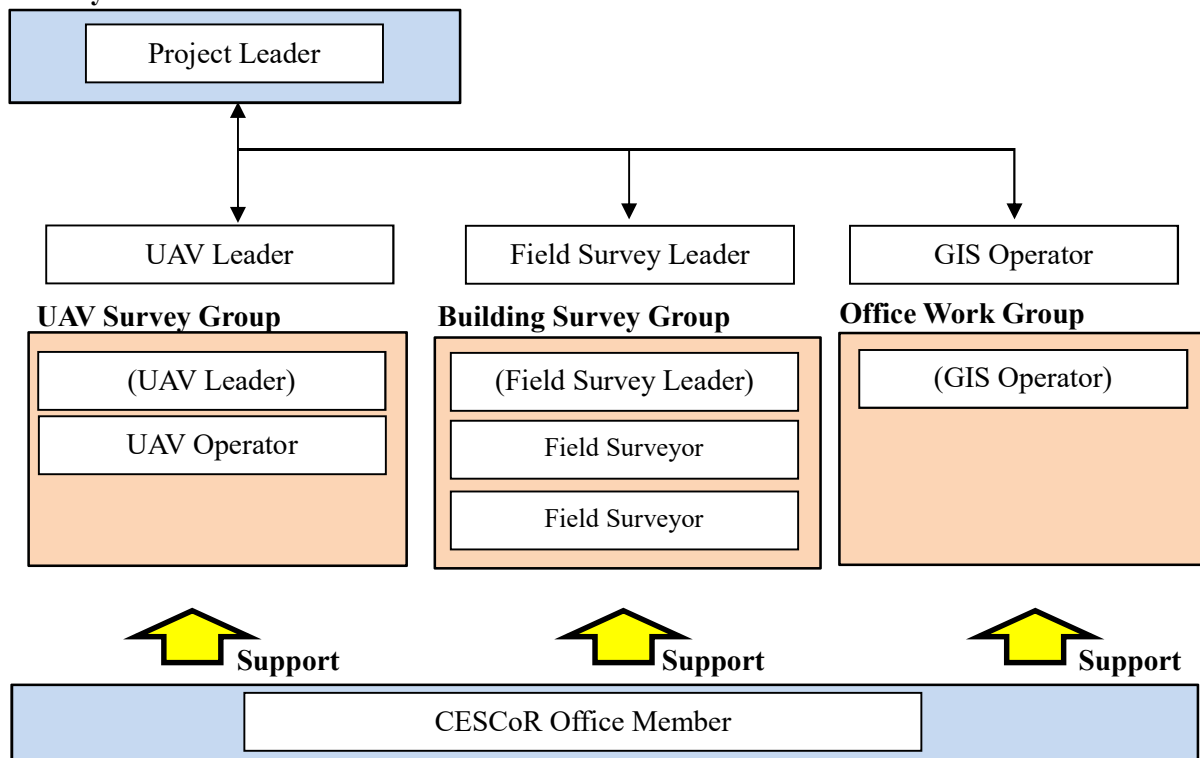


Figure 2.2 Organizational Structure

2.2.2 Main Role and Task for Each Member

(1) Project Leader

a) Overall Management

- 1) Conduct Overall Management of the Survey
- 2) Control Time Schedule for the Survey strictly
- 3) Communicate Densely and Properly with Relevant People and Organizations
- 4) Consider and Proceed Necessary Action related to the Survey

b) Arrangement for UAV Survey, Field Survey and PTF activity

- 1) Instruct/Document for UAV Survey, Field Survey
- 2) Coordinate so that UAV Survey, Field Survey and Office Work can go smoothly
- 3) Coordinate so that PTF activity (refer to **Chapter 4**) can go smoothly

(2) UAV Leader

a) Management for UAV Survey Group

- 1) Manage UAV Survey Group
- 2) Implement Safety Control for the UAV Survey (including Check List)
- 3) Communicate Densely and Properly with Relevant People and Organizations
- 4) Handle any trouble which causes UAV Survey
- 5) Take Necessary Action related to the UAV Survey

b) UAV Survey

- 1) Take Aerial Imagery by using UAV
- 2) Take Necessary Action related to UAV Operation

(3) UAV Operator

a) UAV Survey

- 1) Take Aerial Imagery by using UAV
- 2) Take Necessary Action related to UAV Operation

b) Assistance of UAV Survey

- 1) Assist UAV Leader
- 2) Take necessary action on the instruction from UAV Survey

(4) Field Survey Leader (FS1)

a) Manage Field Survey Group

- 1) Manage UAV Survey Group
- 2) Implement Safety Control for the UAV Survey (including Check List)
- 3) Communicate Densely and Properly with Relevant People and Organizations
- 4) Handle any trouble which causes UAV Survey
- 5) Take Necessary Action related to the Field Survey

b) Field Survey

- 1) Take photos of facility from the Ground
- 2) Count Existing facility on the Ground and confirm the Number Matches One of RMM
- 3) Clarify the kind of facility
- 4) Take Necessary Action on the Instruction from Office Work Leader

(5) Field Surveyor (FS2)

a) Field Survey

- 1) Take photos of facility from the Ground
- 2) Count Existing facility on the Ground and confirm the Number Matches One of RMM
- 3) Clarify the kind of facility
- 4) Take Necessary Action on the Instruction from Office Work Leader

(6) Field Surveyor (FS3)

a) Field Survey

- 1) Take photos of facility from the Ground
- 2) Count Existing facility on the Ground and confirm the Number Matches One of RMM
- 3) Clarify the kind of facility
- 4) Take Necessary Action on the Instruction from Office Work Leader

(7) GIS Operator

a) Operation of GIS and Image Processing

- 1) Develop and update the Database
- 2) Operate Data Processing (including Ortho Image, GIS and Data base processing)
- 3) Count the building on the images

2.3 Calculation of UAV Survey time

2.3.1 Survey Length / Day

Survey Length / Day is calculated as the following.

Table 2-4 PREREQUISITE

No.	Items	Description	Parameter
1	Survey site risk	It becomes delayed due to some troubles such as Communication failure during flight. Also, Road curve may shorten flight distance.	0.8
2	Climate condition risk	Rain make flight interrupt. The parameter is assumed with the past rain days data. (for details to the following)	0.74
3	Unavailability factor	Holiday should be considered. The parameter is assumed with the date for holidays in 2018 (for details to the following)	0.64

Table 2-5 PREREQUISITE

No.	Items	Parameter
2	Working hour	7 hours / day
3	Length / Flight	0.50 km / Flight
4	Flight Times / Day	9
5	The number of UAV	2*
6	Survey Length /Day (for details to the following)	1.7 km / Day
7	Survey Length /Month (30days for one month)	51.1km / Day

* One Survey party has two UAVs including Spare UAV for troubles. During the survey, the party use one UAV alternately.

2.3.2 CLIMATE CONDITION RISK

Climate Condition Risk

Rain days		Days for 1 year		Rain Rate
95	÷	365	=	0.26
1	-	0.26	=	0.74
		Rain rate		Parameter

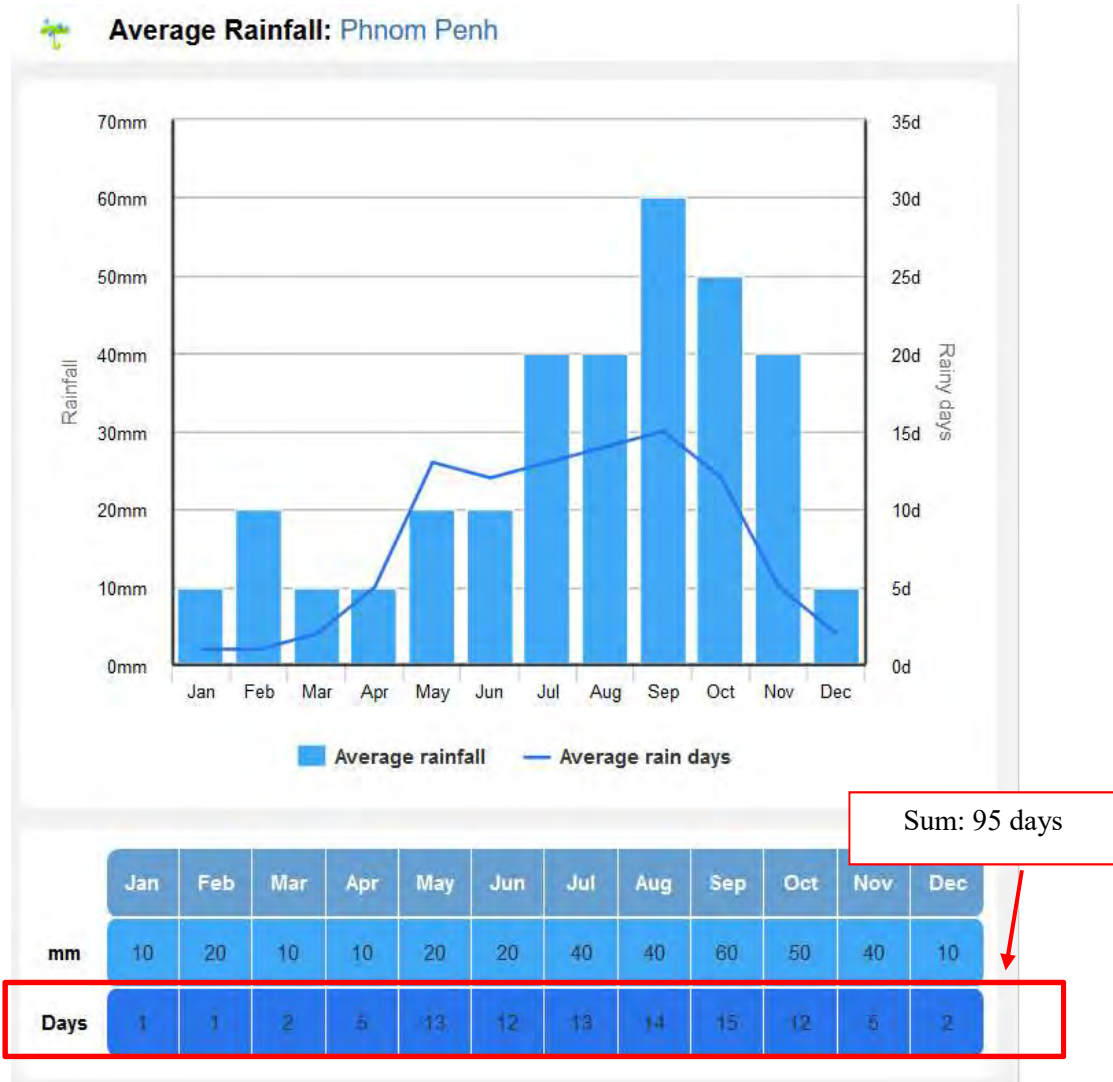


Figure 2.3 AVERAGE RAIN DAYS

http://www.holiday-weather.com/phnom_penh/averages/

2.3.3 UNAVAILABILITY FACTOR

Unavailability factor							
2	÷	7	×	Days for 1 year 365	=	Sat.&Sun.days 104	
104	+	Holidays 33	-	Duplicate date 7	=	Unavailable days 130	
1	-	(Unavailable days 130	÷	Days for 1 year 365)	=	Parameter 0.64

Table 2-6 HOLIDAY LIST

No.	Date	Weekday	Holiday Name	No.	Date	Weekday	Holiday Name
1	1-Jan	Monday	New Year	18	18-Jun	Monday	King's Mother's Birthday
2	7-Jan	Sunday	Victory over Genocide Day	19	21-Jun	Thursday	June Solstice
3	31-Jan	Wednesday	Meak Bochea Day	20	23-Sep	Sunday	September equinox
4	8-Mar	Thursday	International Women Day	21	24-Sep	Monday	Constitutional Day
5	20-Mar	Tuesday	March equinox	22	8-Oct	Monday	Pchum Ben Day (Day 1)
6	14-Apr	Saturday	Khmer New Year Day (Day 1)	23	9-Oct	Tuesday	Pchum Ben Day (Day 2)
7	15-Apr	Sunday	Khmer New Year Day (Day 2)	24	10-Oct	Wednesday	Pchum Ben Day (Day 3)
8	16-Apr	Monday	Khmer New Year Day (Day 3)	25	15-Oct	Monday	Commemoration Day of King's Father
9	29-Apr	Sunday	Visak Bochea Day	26	23-Oct	Tuesday	Paris Peace Agreement's Day
10	1-May	Tuesday	Labour Day	27	29-Oct	Monday	King's Coronation Day
11	3-May	Thursday	Royal Plowing Ceremony	28	9-Nov	Friday	Independence Day
12	13-May	Sunday	Mother's Day	29	22-Nov	Thursday	Water Festival Ceremony (Day 1)
13	13-May	Sunday	King's Birthday (Day 1)	30	23-Nov	Friday	Water Festival Ceremony (Day 2)
14	14-May	Monday	King's Birthday (Day 2)	31	24-Nov	Saturday	Water Festival Ceremony (Day 3)
15	15-May	Tuesday	King's Birthday (Day 3)	32	10-Dec	Monday	International Human Rights Day
16	1-Jun	Friday	International Children Day	33	21-Dec	Friday	December Solstice
17	17-Jun	Sunday	Father's Day				

Red: Duplicate days between Sat.&Sun. and Holiday

Calculation of Survey Length / Month

km/Flight		Flight time /Day		The number of UAV		km/Day	
0.5	×	9	×	1	=	4.50	
km/Day		Survey Site Risk		Climate condition Risk		Unavailability factor	km/Day
4.50	×	0.8	×	0.74	×	0.64	= 1.7
km/Day		Day / Month					km/Day
1.70	×	30			=		51.1

Forecasting Time to complete CSI

Location	Distance	km/Month	Initial Time*	Travele Time**	Month	Round
KAMPONG CHHNANG	93	51.1	0.5	0.12	2.32	2.5
PURSAT	88	51.1		0.23	1.95	2.0
BATTAMBANG	112	51.1		0.22	2.41	2.5
BANTEAY MEANCHEY	73	51.1		0.19	1.62	2.0
All	2.5	2.0	2.5	2.0	9.0	

* Initial time : Adding extra time for initial work

** Tavele time: Pursat takes 0.5day for one round trip to Phong Pheng.

** Tavele time: Pursat takes 1day for one round trip to Phong Pheng.

** Tavele time: Battambang takes 1.5day for one round trip to Phong Pheng

** Tavele time: Banteay Meanchey takes 2day for one round trip to Phong Pheng

Travel Time (day)	Month	Frequency for go-home / Month	Travele Time**
0.5	1.8	4	0.12
1.0	1.7	4	0.23
1.5	2.2	2	0.22
2.0	1.4	2	0.19

2.4 Items to be collected / recorded for RMS

Items to be collected / recorded for RMS are shown in **Table 2-7** and **Table 2-8**. These items are discussed and updated during Pilot Project through TF meetings and PTF activities. At this point, Option1 Point + Attribute Information, Option2 Empty Land identification of Management and Option3 Preliminary Calculation for Compensation will be tried for right RMS.

Table 2-7 Items to be collected / recorded for RMS (1/2)

RMD Items		Option1	Option2	Option3	No Need
Basic Condition					
	Aerial photo	X			
	Administrative Boundary	X			
	Road Center Line	X			
	Sta. No. (normally is used in the road inventory)		X		
	Location of KM Post (existing KM on the map)		X		
	ROW Boundary	X			
	Location of ROW Boundary Pole		X		
	Location of COI Boundary Pole		X		
	Road Structure to be Maintain (Structure/ Drainage/ Slop/ Others)			X	
	Structural Boundary of Road (Corridor of Impact)		X		
	Benchmark			X	
Land Condition					
	Land Registration inside of ROW		X		
	Land Registration outside of ROW				X
	Topographic Character of the Road (Flat/ Embankment/ Retaining Wall and etc.)				X
	Condition of Land Use inside of ROW		X		
	Condition of Land Use outside/ vicinity of ROW				X
	Possibility of Future Development of the Land				X
	Location of Open Area	X			
	Access road to SEZ (Big factory, shopping mall, pagoda, school)	X			
Permanent Obstruct Articles (inside ROW)					
Building	Location of existing structure on the map	X			
	Location of building/structure under construction		X		
	Location (STA.)		X		
	Location (Coordination)				X
	Photos taken at Ground Level		X		
	Year of Built				X
	Size: Area	X			
	Size: Floor Area (No. of Floor)			X	
	Category: Resident/ Shop/ Factory / Storage/ Workshop/ Others)			X	
	Structural Type: Concrete/ Brick/ Wood/ Others			X	
	Land Registration				X
	Building Permission (MLMUPC, Local Authority and etc.)				X
	Public parking		X		
	Permission/ Principal Agreement of Temporally Use in ROW		X		

Table 2-8 Items to be collected / recorded for RMS (2/2)

RMD Items		Option1	Option2	Option3	No Need
Owner/ Residents	Name of Owner and contact No.			X	
	Name of Residents and contact No.			X	
	No. of Household			X	
	No. of Residents			X	
	Residents Information (Occupation, Income and etc.)			X	
Temporarily Structures (inside ROW)					
Mobile Shop	Location (taking a photo)	X			
	Type of Structure				X
	Size				X
	Name of Owner and contact No.				X
	Registration and Permission				X
Access Road/ Embankment constructed by the User	Location	X			
	Type of Structure		X		
	Drainage Adoption		X		
	Size		X		
	Name of Owner and contact No.				X
	Registration and Permission		X		
Other Structures/ Utilities					
Signboard	Location of Signboard	X			
	Owner and contact number of Signboard		X		
	Size of Signboard		X		
	Permission of Signboard		X		
Utilities	Location of Utility (Power supply, Water)	X			
	Location of Utility (Sewage infrastructure) by the User	X			
	Owner of Utility		X		
	Size of Utility		X		
	Permission of Utility		X		
Illegal Encroachment Prevention Activities					
	Record of Public Consultation Meeting (PCM)		X		
	Record of Patrol Activities		X		
	Record of Warning		X		
	Record of Installation Location of ROW Boundary Pole		X		
	Record of Installation Location of COI Boundary Pole		X		
	Record of Installation Location of ROW Signboard		X		
	Record of Installation Location of Fence		X		
	Record of Land Registration			X	
	Record of Understanding of ROW Policy by Area/ Household		X		
	Record of Acceptance of Relocation by Area/ Household		X		

Note) Should be reviewed and revised by RID after discussion of IEP

2.5 Safety Management

2.5.1 Emergency Contact

Surveyors in field always have Emergency Contact ready. Emergency Contact in Pilot Project is based on the same one in CESCO project.

2.5.2 Check List

When operating UAV, UAV Operator will check the following Check List for safety.

Daily Work Report

UAV Leader (UAVL) must fill in this sheet DAILY, and submit to Project Leader (PL) in WEEKLY bases.

DATE	
PLACE (town or district)	
WORK TIME	~

Check list (FLIGHT MISSION BASES)										
No.	1	2	3	4	5	6	7	8	9	10
Operator name										
Mission name										
Take-off& landing space (5m*5m) is secured with no obstacles										
Micro SD card is set in drone, and camera/gimbal can rotate freely										
Drone battery is full and firmly locked										
Propellers and propeller protectors are properly equipped										
Flight setting (speed, lap, altitude, angle) is properly set										
Flight area is visible from base										
Take-off time										
Landing time										
Switch off Drone FIRST, and switch off controller NEXT										
Copy images to laptop with mission name, and check image quality & quantity										

Note: do not keep UAV equipment or accessories under direct sun. Maintain room temperature by car air conditioner.

Figure 2.4 Check List (Flight Mission Bases)

Chapter 3 IEP Implementation Plan

3.1 Outline Contents

3.1.1 IEP Hard Approach

An Illegal Encroachment Prevention (IEP) activities are planned to discuss with MPWT officers. The plan presented is shown below.

1) Working Items

IEP Soft and Hard Approaches are planned. The following working items are planned in Pilot Project.



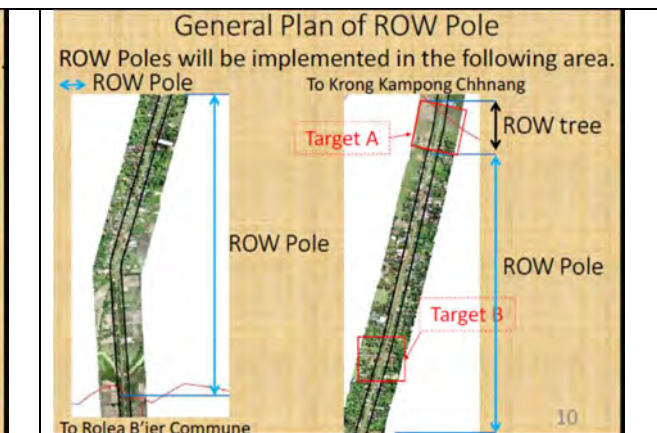
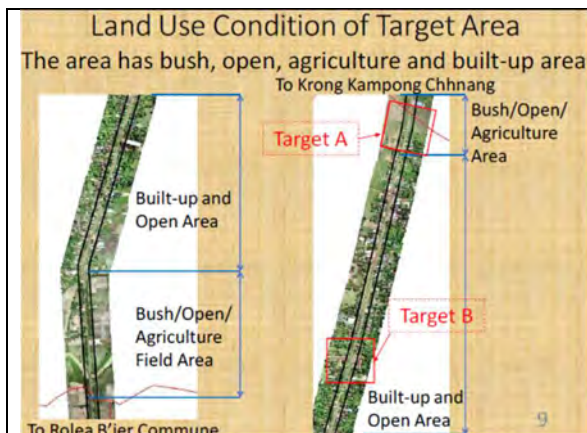
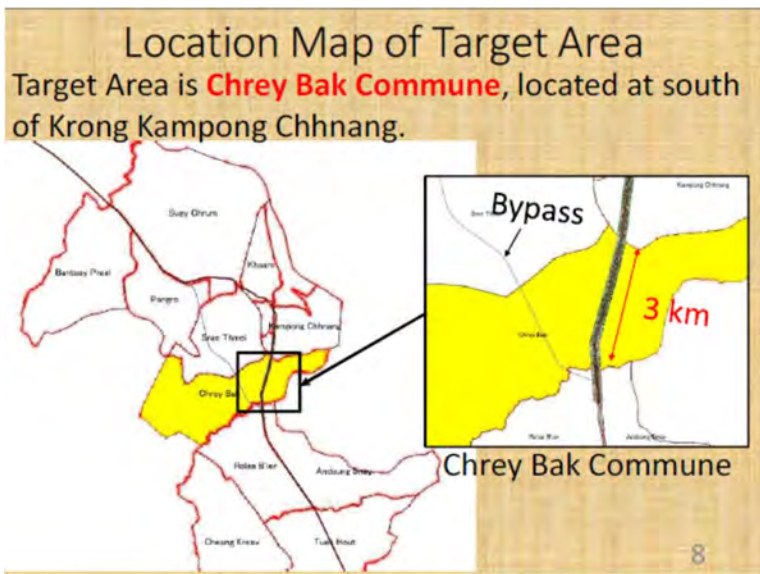
Activities for Future Project	Activities for Existing Project																	
	Hard Approach				Soft Approach													
	Installing Facilities				Permission and Registration		Monitoring and Intervention		Raising awareness									
New Road Design	Road from the edge of ROW boundary and keep empty space in the middle	Constructing sub-road as ROW boundary	Digging channels as ROW boundary	Pole	Signboard	Fence	Growing Tree	ROW marking plate	Highlighting color on tile	Access road permit	ROW registration	ROW use permit	Appealing to the court	Collaborating with local authorities	Regular patrol activities	Local governmental official	High school and university students	Local people

Figure 3.1 Activities for Illegal Encroachment Prevention (IEP)

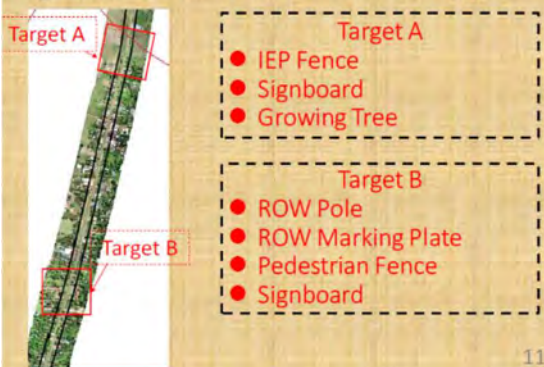
Image of Working Items



2) Target Area



General Plan of Target A and B
Target A and B will be tried for the following



11

Working Items of Target Area A



12

Target Area A

Picture1 : National Road No.5



13

Target Area A

Picture2 : Open / Bush Area



14

Target Area A

Picture3 : Open / Bush Area



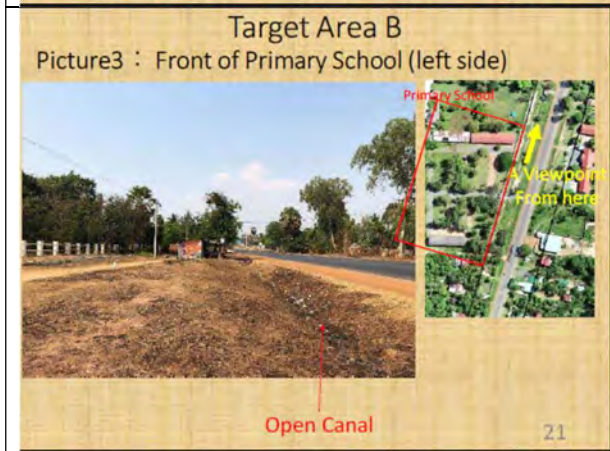
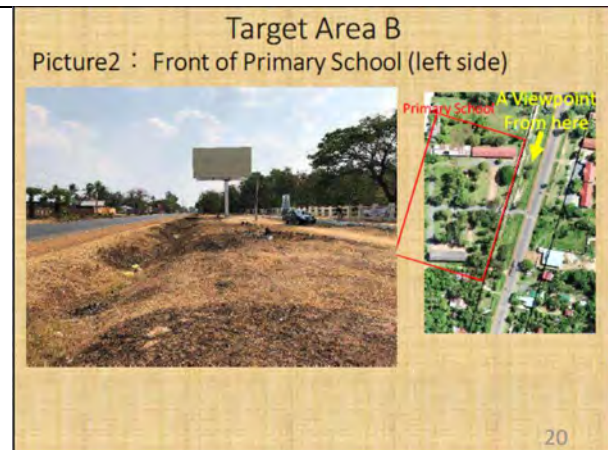
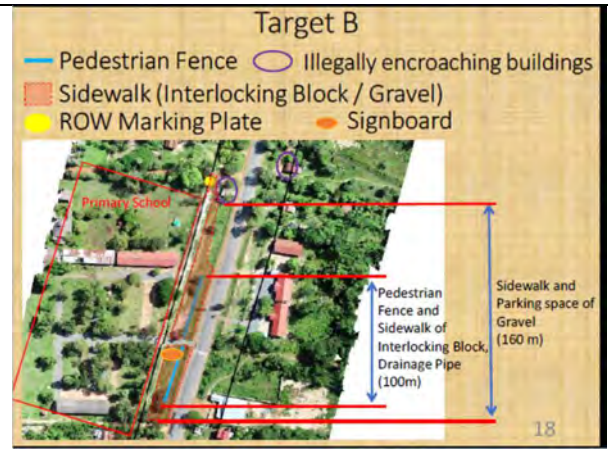
15

Target Area A

Picture4 : Private things inside ROW



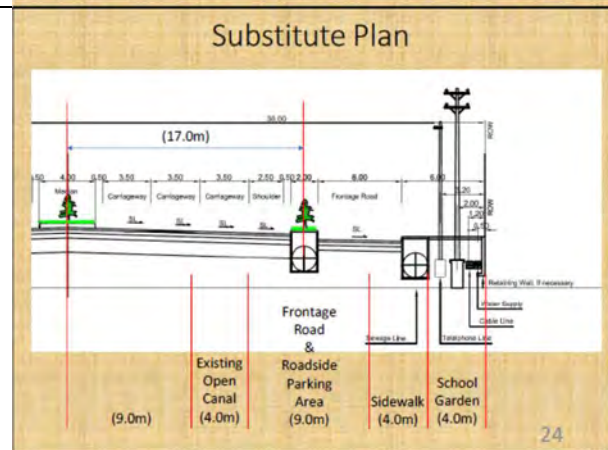
16



Standard Drawings and Drainage Pipe

Stage of Improvement	Standard Drawings			DPWT Plan			IEP
	No. of Lane	Frontage Road	Location of Drainage	No. of Lane	Frontage Road	Location of Drainage	
Initial (Existing)	2	—	—	2	—	11 meters from Centerline	Sidewalk Fence Parking
Intermediate	4	—	—	4	—	13 meters from Centerline	Sidewalk Fence Parking
Final	6	6m × 2	17 meters from Centerline	?	?	?	Sidewalk Fence Parking

23



3) Schedule

Activities schedule is planned as shown in the table below.

Table 3.1 Implementation Schedule

Schedule of IEP hard Approach	
IEP Hard Approaches in Pilot Project are planned as the following Table.	
Item	Date
Invitation to Contractor	12 th April 2019
Signing of Contract	23 rd April 2019
Kick-off Meeting	24 th April 2019
Contractual maturity date	31st August 2019

Note: Documentation and Report shall be prepared and conducted, after "Completion of Construction". Construction will end before 31st July 2019

26

Chapter 4 PTF Activity

4.1 PTF Activity Policy

This Chapter shows PTF activity. Through PTF activity for CSI and IEP of the Pilot Project, PTF members improve understanding for the following:

- 1) They can build up tentative RMM and RMD with the project team
- 2) They can plan and implement IEP activity
- 3) They can create rational relationship with DPWT and Local Authority for CSI and IEP activity
- 4) They can consider what is the best for others related RMS

4.2 PTF Activity for CSI

Table 4-3 shows PTF Activity on CSI of Pilot Project. It is planned as the following policy:

- 1) PTF members from MPWT is grouped into three (Gr-A, Gr-B and Gr-C),
- 2) Each Group join CSI activity once a week
- 3) CSI activity has three sections (UAV, GIS and Field Survey)
- 4) Each section will be implemented on fixed day in a week to avoid confusion (refer to **Table 4-1**)
- 5) After the above activities ended, prepare for Kick-off meeting in the next province to start CSI
- 6) PTF members hold Kick-off meeting to improve understanding of relevant authorities including DPWT and Local Authorities so that CSI can proceed with no problems

Table 4-1 PTF Activity for CSI

Activity	Contents	PTF		Day	Remarks
		MPWT	DPWT		
UAV Survey	Take Aerial Imagery by using UAV	X	X	Every Friday	Each Activity has two times in each Province
GIS	Process GIS, Ortho and DB before Field Survey	X	-	Every Wednesday	
Field Survey	Take Photos of Facility from the Ground Map necessary data on the tablet	X	X	Every Thursday	
Kick-off meeting	Kick-off meeting	X	X	Before the above activity	One time in each Province

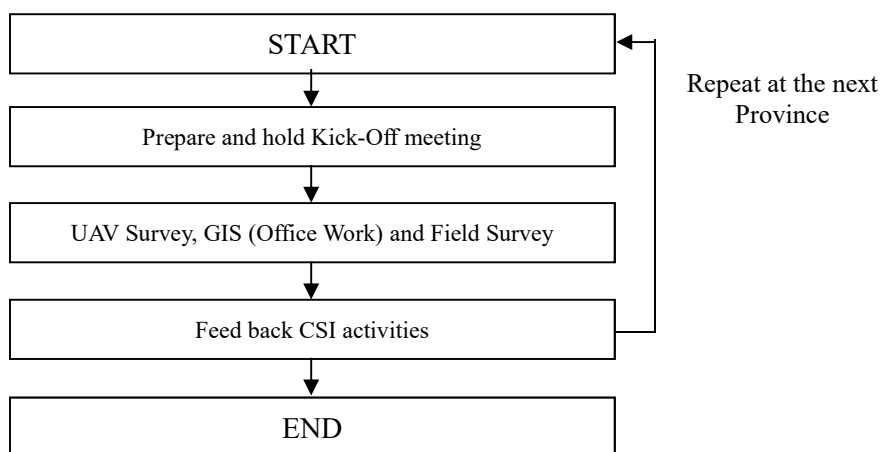


Figure 4.1 Overall schedule of PTF Activity for CSI

Table 4-2 Grouping of PTF members

Position	Group A	Group B	Group C
Group Leader	Mr. Hay Chandara	Mr. Chea Samnang	Mr. Khuon Kompheak
Members	Mr. Sok Chandy	Mr. Sao Pramarak	Mr. Penh Oddum
Members	Mr. Kain Theara	Mr. Chhouk Sochea	Mr. Keat Sarun
Members	Mr. Preang Samoeun	Mr. Ob Socharidh	Mr. Lon Davuth
Members	-	Mr. An Menghour	Ms. Oum Sokvasey

Table 4-3 Overall Schedule of CSI in Kampong Chhnang Province

No	Date	Event	PTF				
			Gr-A	Gr-B	Gr-C	DPWT	
1	2018/5/29	Tue	UAV Survey starts				OJT: UAV
2	2018/5/30	Wed					OJT: UAV
3	2018/5/31	Thu		OJT: UAV			OJT: UAV
4	2018/6/1	Fri	off				
5	2018/6/2	Sat	off				
6	2018/6/3	Sun	off				
7	2018/6/4	Mon					OJT: UAV
8	2018/6/5	Tue	Kick-off Meeting	Kick-off	Kick-off	Kick-off	OJT: UAV
9	2018/6/6	Wed					OJT: UAV
10	2018/6/7	Thu		OJT: GIS			OJT: UAV
11	2018/6/8	Fri			OJT: UAV		OJT: UAV
12	2018/6/9	Sat	off				
13	2018/6/10	Sun	off				
14	2018/6/11	Mon	FS office work				
15	2018/6/12	Tue					
16	2018/6/13	Wed		OJT: FS			OJT: FS
17	2018/6/14	Thu			OJT: GIS		
18	2018/6/15	Fri				OJT: UAV	OJT: UAV
19	2018/6/16	Sat	off				
20	2018/6/17	Sun	off				
21	2018/6/18	Mon	off				
22	2018/6/19	Tue					
23	2018/6/20	Wed			OJT: FS		OJT: FS
24	2018/6/21	Thu				OJT: GIS	
25	2018/6/22	Fri		OJT: UAV			OJT: UAV
26	2018/6/23	Sat	off				
27	2018/6/24	Sun	off				
28	2018/6/25	Mon					
29	2018/6/26	Tue					
30	2018/6/27	Wed				OJT: FS	OJT: FS
31	2018/6/28	Thu		OJT: GIS			
32	2018/6/29	Fri			OJT: UAV		OJT: UAV
33	2018/6/30	Sat	off				
34	2018/7/1	Sun	off				
35	2018/7/2	Mon	FS office work				
36	2018/7/3	Tue					
37	2018/7/4	Wed		OJT: FS			OJT: FS
38	2018/7/5	Thu			OJT: GIS		
39	2018/7/6	Fri				OJT: UAV	OJT: UAV
40	2018/7/7	Sat	off				
41	2018/7/8	Sun	off				
42	2018/7/9	Mon					
43	2018/7/10	Tue					
44	2018/7/11	Wed			OJT: FS		OJT: FS
45	2018/7/12	Thu				OJT: GIS	
46	2018/7/13	Fri					OJT: UAV
47	2018/7/14	Sat	off				
48	2018/7/15	Sun	off				
49	2018/7/16	Mon					
50	2018/7/17	Tue					
51	2018/7/18	Wed				OJT: FS	OJT: FS
52	2018/7/19	Thu					
53	2018/7/20	Fri					

4.3 PTF Activity for IEP

A diagram below describes an overview of activities for the soft approach.

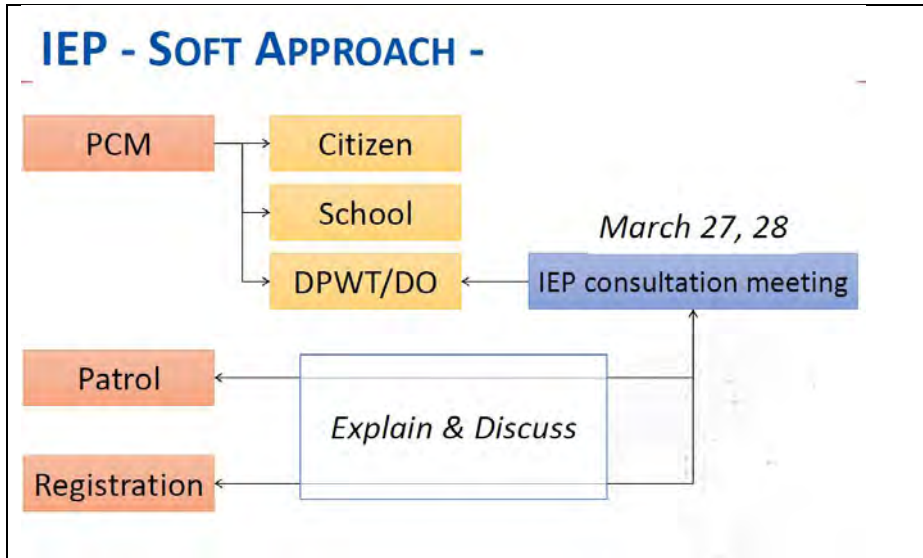


Figure 4.2 Approach diagram of PTF Activity for CSI

The public consultation meetings (PCM) were planned in the pilot project. The schedule is set as below.

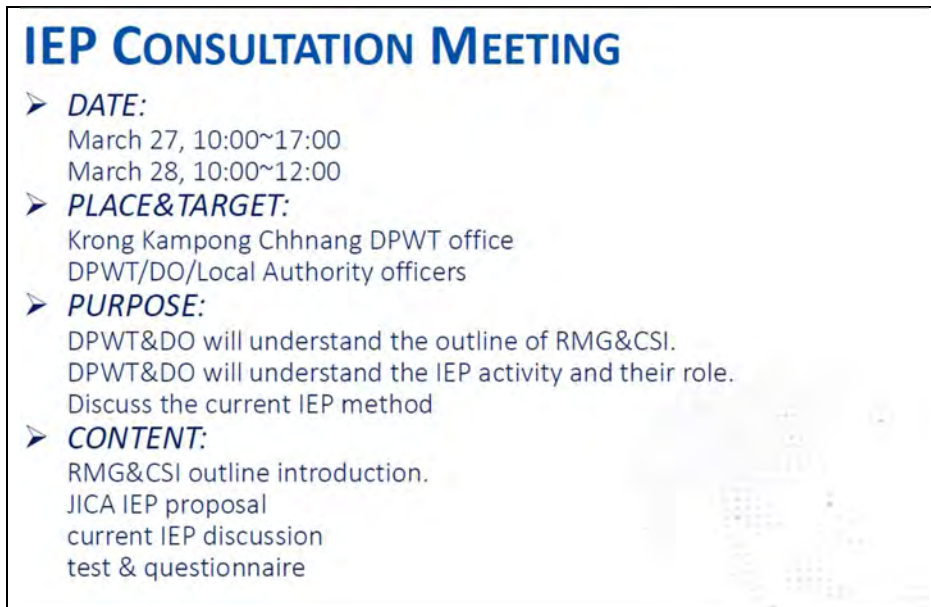


Figure 4.3 Approach diagram of PTF Activity for CSI

Invitations are planned to send to the following stakeholders.

Table 4-4 Intended Stakeholders in Kampong Chhnang Province

	Organization	Intended Stakeholders
1	DPWT	8 officials in KPC DPWT
2	District Offices	Each official in 5 District Offices in KPC DPWT.
3	Local Authority	Commune& 4~5village Head (from Chrey Bak) and police chief in the commune, MLMUPC district office and provincial department

J4-2: PTF Activity Record



IEP CONSULTATION MEETING MEMO WITH DPWT

Date & Time:	27 th -28 th March 2019
Place	DPWT Kampong Chhnang Meeting Room
MPWT Attendees:	Mr. Chea Samnang, Chief of ROW Management Office, RID
DPWT Attendees:	H.E. Keo Pov, Director of DPWT Kampong Chhnang Mr. Leng Vesna, Officer of Public Order Office Mr. Khun Khemara, Officer of Technical Office Ms. Nin Nimol, Officer of DPWT Kampong Chhnang Mr. Eang Hour, Chief of Public Work Office, DPWT Kampong Chhnang
Local Authorities Attendees:	Mr. Be Sarom, Deputy Governor of Kampong Chhnang City Mr. Soum Vin, Governor of District Mr. Than Sarum, Deputy Governor of Boribor District Mr. Tang Bunnot, Chief of Chrey Bak Commune Mr. Mok Tim, Chief of Prey Koh Village Mr. Prak Theng, Deputy Chief of Toul Ksach Village Mr. Keo Yeum, Chief of Tnol Tmey Village Mr. Thok Phearom, Chief Office of Kampong Chhnang City Mr. Nern Sopheab, Deputy Chief of District Office Ms. Seng Sreynheb, Deputy Chief of Prey Puoch Village Ms. Mot Samet, Chief of Chrey Bak Village Mr. Khlot Vanna, Police Officer of Chrey Bak Village Mr. Chuon Channa, Deputy Governor of Samaki Mean Chey District Mr. Sorn Saman, Deputy Governor of Kampong Tralach District Mr. Saray Oum, Chief of General Affair Office
Project Team:	Mr. Watson, Mr. Ochi, Mr. Socheat, Mr. Sereyvuth, Ms. Sophy
Agenda / Discussion Points:	<ul style="list-style-type: none">▪ To discuss on IEP approaches for pilot project▪ To confirm schedule of some events

Presentation and Discussion:

1- Presentation on CESCoR Project by Mr. Socheat

- Background
- Integrated ROW Management Framework



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



- Project Outputs
- Activities
- Pilot Project Overall and CSI
- CSI Roles
- IEP Roles
- TOT

2- Presentation on Right of Way Management System in Cambodia by Mr. Samnang

- Outline of Pilot Project for RMS Development
 - 2.1 Target Area
 - 2.2 ROW in Cambodia
 - 2.3 Institutional Arrangement
- Methodology
 - UAV Aerial Imagery
 - Image Processing and Data Production
 - Database, Field Survey and Data Finalization
 - Illegal Encroachment Prevention (IEP)

3- Presentation on Daily Right of Way Management Activities by KPC DPWT officer

- Road Laws and Sub Decree
- Road Law Dissemination Activities
- ROW Management Activities

4- Presentation on Pilot Project IEP by Mr. Socheat

- Implementation of IEP
- Concept of IEP Classification
- Criteria for IEP Selection
- IEP Methods
- Plan for IEP Methods
- IEP Methods to Be Discussed
- PCM
- Monitoring and Intervention
- Permission and Registration

5- Presentation on Overview of IEP Hard Approach in Pilot Project

2

CTI Engineering
International Co., Ltd. (CTII)

Environment and Social Infrastructure
Consultant Co., Ltd. (ESIC)

Hanshin Expressway
Company Limited (HEX)

Joint Venture

Address: JICA Project Office, c/o International Cooperation Department, MPWT, Corner Norodom Blvd,
Street 106, Phnom Penh, Tel: +855-(0)61 960 213



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



- Working Items
- Target Area
- Schedule
- Criteria

Discussion:

Mr. Soheat: Who does the patrol? How many times do you do patrol per week? When the officers find the encroacher, how do you deal with the encroacher?

H.E. Pov (K. Chhnang DPWT Director): Technical officer and public order officer will do patrol at least two times per month and sometime three times per week through the road maintenance activities. When officers find the encroacher, first they will talk to encroacher. In case, talking or warning does not work with the encroacher. District officer will report to the provincial officer to ask for the intervention.

During the Annual Meeting of Province, deputy governor of district has suggested me to discuss with the provincial governor to arrange a special meeting to find measurement for managing ROW properly. However, because I have been busy with other events of the DPWT and Province, I have not yet started. I am planning to do it in the 2nd semester of this year.

Additionally, since 2014 I have requested to upper management level to establish the road inspector committee. Until now, my request has not been answered.

Chrey Bak Commune Chief: We are happy hearing that JICA project will support us to prevent the ROW Encroachment. I am more grateful that my commune has been selected to be sample area to apply IEP approaches. I would like to confirm which roads that JICA project will apply IEP approaches. We have two roads (old national road about 2km or new bypass).

Project Team: We are also happy hearing that commune chief is going to cooperate with us. Regarding the IEP application, we will work on old national Road/existing national road (2km) which is access to the Kampong Chhnang city. We will discuss in details for the IEP approaches in Chrey Bak commune later. Also, we will visit the site for the better understanding on the IEP approaches.



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



Discussion about the encroachment of gas/fuel station:

Project Team: I found that there is new construction of fuel station (which was not exist last year when we did the drone flight); did the owner ask the permission from your office?

Chrey Bak Commune Chief: Gas/Fuel station's owner asked permission directly to local authority (provincial level but we did not know which office); they did not inform or ask for the permission from us. During the construction, our official noticed that and reported to the upper levels. After that our official from DPWT and Department of Land Management, Urban Planning, Construction and Cadastral went to talk and explain to owner about this illegal encroachment. However, it did not work. Construction was completed with the agreement made between the owner and the provincial hall. Owner has agreed to move this station without any compensation for the future road widening project.

DPWT Director: We went to explain and warn the encroacher about this illegal construction inside the ROW; however, they ignored us since the provincial hall already agreed. DPWT did not join or sign in the agreement between the gas station owner and provincial hall.

Mr. Soheat: So far, what are the difficulties of ROW management for DPWT officials?

DO officer: So far, we have many difficulties to deal with local people; especially encroachers. They often complain to us. The listed below statements are the concerns between the DO officer, local authorities and local people.

- They said other people can do, why I cannot do.
- They cannot do business if they move out from ROW boundary.
- They said they will follow us, but at night they construct the soft building silently. (Steel structure is fast to be built just one or two days especially during the weekend. when patrolling officers know, the structure has been already finished).
- Sometime they blame and use bad words to patrolling officers.
- Some people have high social status, so they don't listen to patrolling officers.
- They never ask permission form DPWT; they only ask permission from Provincial Governor, but local people not only build their house inside their land, but also fill the land inside the ROW.



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



- They get approval from provincial office to build their house or fill their land, but they also fill land inside the ROW to access to their house without asking permission from DPWT officers.

Director of DPWT: So far, regarding the human resources we have competent officials (engineers); however, we are lacking the number of staffs. Each year we can get new staff only one person; while in some years four or five officials get retired. I hope the MPWT will increase the quota for the number of new staff. Moreover, we are lacking the budget to support the expenses on the transportation.

Director of DPWT: We have problems for the collaboration with relevant agencies or ministries. We are facing to deal with people due to the politics and living condition. Enforcing the law is the best solution.

Mr. Samnang (MPWT): ROW pole is the most effective based on the observation. However, with punishment and law enforcement, it will be better.

Meeting in DPWT Kampong Chhnang and site visit



*****Site Visit to Check the location for IEP and PCM Arrangement on 28th March, 2019**

1- Site Visit for IEP approach application



Place: Gas Station near K. Chhnang City in Chrey Bak Commune

5

and Social Infrastructure
ant Co., Ltd. (ESIC) Hanshin Expressway
Company Limited (HEX)
t Venture
operation Department, MPWT, Corner Norodom Blvd,

Street 106, Phnom Penh, Tel: +855-(0)61 960 213



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



- Discuss the application to locate the encroaching building
- Discuss the location to install the ROW Signboard



Place: Chrey Bak Primary School in Chrey Bak Commune

- Discuss the location of ROW signboard needed to be installed near the primary school



Place: Rolear B'ear District Office in Chrey Bak Commune

- Discuss the location of ROW signboard needed to be installed near the district office



Place: Near Chrey Bak Primary School in Chrey Bak Commune

- Discuss the location to install IEP hard

Structure Hanshin Expressway
Company Limited (HEX)

Joint Venture

Address: JICA Project Office, c/o International Cooperation Department, MPWT, Corner Norodom Blvd, Street 106, Phnom Penh, Tel: +855-(0)61 960 213



approaches (installing fence, sidewalk, crossing mark, etc.) with MPWT and DPWT officials

***** Regarding the IEP hard approaches application, there will be further discussion because the DPWT has a plan or project to improve the existing road up to 4 lanes (2 lanes both sides). DPWT will share the drawing with the Project Team for the further study and discussion.**

2- Public Consultation Meeting (PCM) Arrangement

- PCM with Local people (citizen)

Tentative Venue: Rolear B'ear District Meeting Hall

Proposed Date: April 20 or April 21, 2019

(Saturday or Sunday morning based on the availability of Electricity shift schedule)

Participant: Local People (100 people)

DPWT will confirm the schedule of electricity to the MPWT and Project Team. Project Team will submit the request letter to MPWT to ask for coordination and support for the PCM arrangement such as invitation letter (from MPWT to DPWT and DPWT to Local authorities and to citizen).



- PCM with Students

Tentative Venue: Meeting Hall of Rolear B'ear High School

Proposed Date: April 24 or April 25, 2019

(Wednesday or Thursday morning based on the availability of Electricity shift schedule)

Participant: High School Students and teachers (total is 100 persons)



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



DPWT will confirm the schedule of electricity to the MPWT and Project Team. Project Team will submit the request letter to MPWT to ask for coordination and support for the PCM arrangement such as invitation letter (from MPWT to DPWT and DPWT to Local authorities and to director of High school).



AGENDA

IEP Consultation Meeting on the Pilot Project for
The Project for Capacity Enhancement on Environmental and Social
Considerations in Implementing Agency in Road Sector in Cambodia
(CESCoR)

Kampong Chhnang, 27th March 2019

Time	Program
10:00-10:10 (10)	Opening Remarks of the Meeting by Representative from RID/MPWT
10:10-11:00 (50)	Explanation of Overall of JICA project by the Project Team member
11:00-11:10 (10)	Break
11:10-12:00 (50)	Explanation of Right Of Way Management System by MPWT official
12:00-13:30 (90)	Lunch break
13:30-14:30 (60)	Explanation on Daily Activities on ROW Management by Kampong Chhnang DPWT official
14:30-15:00 (30)	Break
15:00-17:00 (120)	Explanation and discussion on IEP Approaches by the Project Team member

Kampong Chhnang, 28th March 2019

Time	Program
9:00-11:00 (60)	Joint Practice of Patrol @ Chrey Bak commune
11:00-11:30 (30)	Break
11:30-12:00 (60)	Questionnaire

គម្រោង CESCOr

គម្រោងពង្រឹងសមត្ថភាពលើការពិចារណាផ្នែកបរិស្ថាន និងសង្គមក្នុងអង្គការប្រតិបត្តិលើវិស័យផ្លូវថ្នល់ក្នុងព្រះរាជាណាចក្រកម្ពុជា

ប្រវត្តិរបស់គម្រោង

ព័ត៌មានស្តីពីគម្រោង

• រយៈពេលអនុវត្តគម្រោង:

គម្រោងទទួលបានការគាំទ្រថវិកាពីភ្នាក់ងារសហប្រតិបត្តិការអន្តរជាតិដំបូង ដែលហៅកាត់ថា ថែកា សម្រាប់រយៈពេល ៣ឆ្នាំចាប់ពីខែមករា ឆ្នាំ២០១៧ ដល់ខែធ្នូ ឆ្នាំ ២០១៩។

• គោលដៅរបស់គម្រោង:

ធានាឱ្យបានថាការពិចារណាលើផ្នែកបរិស្ថាន និងសង្គមត្រូវបានអនុវត្តសម្រប និងត្រឹមត្រូវដោយក្រសួងសាធារណការ និងដឹកជញ្ជូន។

• គោលបំណងគម្រោង:

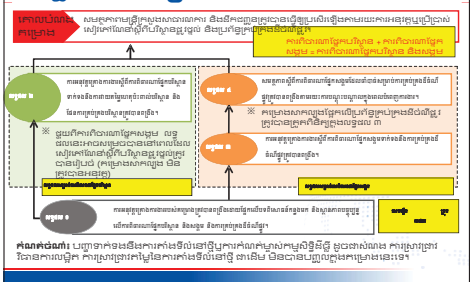
សមត្ថភាពមន្ត្រីក្រសួងសាធារណការ និងដឹកជញ្ជូនត្រូវបានធ្វើឱ្យប្រសើរឡើងតាមរយៈការអនុវត្តប្រើប្រាស់សៀវភៅណែនាំស្តីពីបរិស្ថានផ្លូវថ្នល់ និងប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ។

គ្រោងការគម្រោង

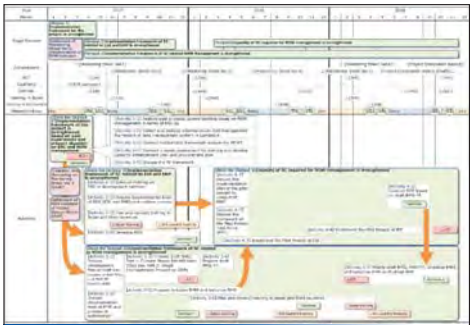
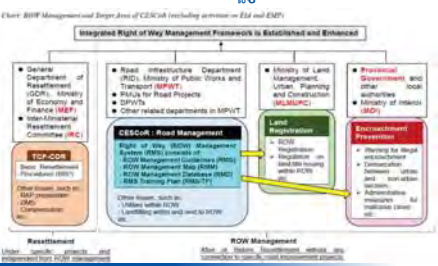
គោលដៅរួម	ធានាឱ្យបានថាការពិចារណាលើផ្នែកបរិស្ថាន និងសង្គមត្រូវបានអនុវត្តសម្រប និងត្រឹមត្រូវដោយក្រសួងសាធារណការ និងដឹកជញ្ជូន
គោលបំណងគម្រោង	សមត្ថភាពមន្ត្រីក្រសួងសាធារណការ និងដឹកជញ្ជូនត្រូវបានធ្វើឱ្យប្រសើរឡើងតាមរយៈការអនុវត្តប្រើប្រាស់សៀវភៅណែនាំស្តីពីបរិស្ថានផ្លូវថ្នល់ និងប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ។
លទ្ធផល ១	កម្មវិធីគ្រប់គ្រងការងារសម្រាប់គម្រោងគ្រប់គ្រងដីចំណីផ្លូវថ្នល់ និងសង្គម និងការប្រុងប្រយ័ត្នដីចំណីផ្លូវថ្នល់
លទ្ធផល ២	កម្មវិធីគ្រប់គ្រងការងារសម្រាប់គម្រោងគ្រប់គ្រងដីចំណីផ្លូវថ្នល់ និងសង្គម និងការប្រុងប្រយ័ត្នដីចំណីផ្លូវថ្នល់ និងសង្គម
លទ្ធផល ៣	កម្មវិធីគ្រប់គ្រងការងារសម្រាប់គម្រោងគ្រប់គ្រងដីចំណីផ្លូវថ្នល់ និងសង្គម និងការប្រុងប្រយ័ត្នដីចំណីផ្លូវថ្នល់ និងសង្គម
លទ្ធផល ៤	កម្មវិធីគ្រប់គ្រងការងារសម្រាប់គម្រោងគ្រប់គ្រងដីចំណីផ្លូវថ្នល់ និងសង្គម និងការប្រុងប្រយ័ត្នដីចំណីផ្លូវថ្នល់ និងសង្គម

- ការពិចារណាលើបរិស្ថាន និងសង្គម មានសារៈសំខាន់សម្រាប់ការអនុវត្តទៅដោយល្អ និងសម្របសម្រាប់គម្រោងហេដ្ឋារចនាសម្ព័ន្ធផ្លូវថ្នល់។
- គម្រោងសហប្រតិបត្តិការបច្ចេកទេសរបស់ភ្នាក់ងារថែកាដែលផ្តោតលើបែបបទមូលដ្ឋាននៃការកែលម្អនៅទីតាំងគម្រោងសេដ្ឋកិច្ច និងហិរញ្ញវត្ថុ និងក្រសួងសាធារណការ និងដឹកជញ្ជូនត្រូវបានបញ្ចូលដោយជោគជ័យក្នុងឆ្នាំ២០១២។
- កែលម្អនៃគ្រប់គ្រងដីចំណីផ្លូវថ្នល់បានបង្កើនការកាន់កាប់ដីចំណីផ្លូវថ្នល់ និងធ្វើឱ្យមានការខ្វះខាតបង់លើសំណងម្តងទៀតក្នុងការកែលម្អនៅទីតាំងថ្មី ជាដើម។
- គម្រោងក៏បានចាប់ផ្តើមក្នុងខែមករា ឆ្នាំ២០១៧។

លទ្ធផលគម្រោង



សមាហរណកម្មគ្រោងការងារលើការគ្រប់គ្រងដីចំណីផ្លូវ



សកម្មភាពគម្រោង



- កិច្ចប្រជុំគណៈកម្មការសម្របសម្រួល**
លើកទី១៖ ថ្ងៃទី៨ ខែឧសភា ២០១៧ **បញ្ចប់**
លើកទី២៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
លើកទី៣៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
លើកទី៤៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
- សិក្ខាសាលា**
លើកទី១៖ ថ្ងៃទី៨ ខែឧសភា ២០១៧ **បញ្ចប់**
លើកទី២៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
លើកទី៣៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
លើកទី៤៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
លើកទី៥៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
លើកទី៦៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
លើកទី៧៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**

លើកទី៧៖ ថ្ងៃទី២៦ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**

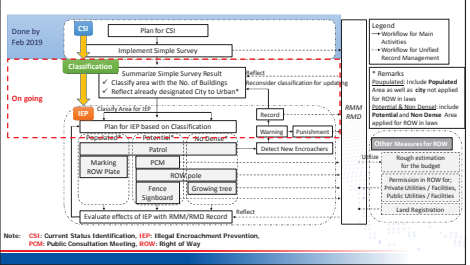
សកម្មភាព

វគ្គបណ្តុះបណ្តាលនៅប្រទេសជប៉ុន

លើកទី១ (ស្តីពីការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងផែនការគ្រប់គ្រងបរិស្ថាន)៖ ថ្ងៃទី០៣ ដល់ថ្ងៃទី២២ ខែមិថុនា ២០១៧ **បញ្ចប់**
លើកទី២ (ស្តីពីការគ្រប់គ្រងដីជម្រក)៖ ថ្ងៃទី២៣ ខែកុម្ភៈ ដល់ថ្ងៃទី២៦ ខែមិថុនា ២០១៧ **បញ្ចប់**
លើកទី៣ (ស្តីពីការគ្រប់គ្រងដីជម្រក)៖ ថ្ងៃទី២៣ ខែកុម្ភៈ ដល់ថ្ងៃទី២៦ ខែមិថុនា ២០១៧ **បញ្ចប់**



តារាងការងារគម្រោងសាកល្បងជម្រុញ



គម្រោងសាកល្បង



សកម្មភាព

ការផ្លាស់ប្តូរប្រភេទនៅប្រទេសជប៉ុន

លើកទី១ (ស្តីពីការវាយតម្លៃហេតុប៉ះពាល់បរិស្ថាន និងផែនការគ្រប់គ្រងបរិស្ថាន)៖ ថ្ងៃទី២៤ ដល់ថ្ងៃទី២៨ ខែកុម្ភៈ ២០១៧ ប្រទេសជប៉ុន **បញ្ចប់**
លើកទី២ (ស្តីពីការគ្រប់គ្រងដីជម្រក)៖ ថ្ងៃទី២៤ ដល់ថ្ងៃទី២៨ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**
លើកទី៣ (សហមេត្តាដោះស្រាយស្តីពីការវាយតម្លៃហេតុប៉ះពាល់)៖ ថ្ងៃទី២៤ ដល់ថ្ងៃទី២៨ ខែកុម្ភៈ ២០១៧ **បញ្ចប់**



គម្រោងសាកល្បង ដំណើរការ CSI

- តារាងដំណើរការ**
ការងារផ្សេងៗគ្នា រវាងកិច្ចសន្យា បញ្ចប់
ការងារប្រមូលព័ត៌មាន រវាងកិច្ចសន្យា បញ្ចប់
ការងារប្រតិបត្តិការ ក្នុងដំណើរការ
- ផែនទីគ្រប់គ្រងដីជម្រក (RMM)**
ស្នើសុំការងារផ្សេងៗគ្នាដើម្បីដឹងពីផែនទី
- ទិន្នន័យគ្រប់គ្រងដីជម្រក (RMD)**
ស្នើសុំបញ្ជាក់ពីការងារផ្សេងៗគ្នា
ស្នើសុំបញ្ជាក់ពីការងារផ្សេងៗគ្នាដើម្បីដឹងពីផែនទី

គម្រោងសាកល្បង

ឈ្មោះ	សម្រាប់ការងារសាកល្បង
សកម្មភាព	ផ្តល់ការងារសាកល្បង (CSI) - ការងារប្រមូលព័ត៌មាន (ទិន្នន័យរូបភាពអាកាសចរណ៍) - ការងារគ្រប់គ្រងដីជម្រក (Ortho images and GIS processing) - ការងារប្រតិបត្តិការ ផ្តល់ការងារសាកល្បង (IEP) - ការងារប្រមូលព័ត៌មាន (ទិន្នន័យរូបភាពអាកាសចរណ៍) - ការងារប្រតិបត្តិការ
ពេលវេលា	ចាប់ពីខែឧសភា ឆ្នាំ២០១៧ ដល់ខែកញ្ញា ឆ្នាំ២០១៧
ទីកន្លែង	ទីកន្លែងសាកល្បងស្ថិតនៅក្នុងតំបន់ ៨ ក្នុងខេត្តសៀមរាប
វិប	1) ទីកន្លែង 2) ទីកន្លែង 3) ទីកន្លែង 4) ទីកន្លែង

តួនាទីក្នុងការធ្វើ CSI

	ឈ្មោះ	ប្រភេទ	ទីកន្លែង	ឈ្មោះ
ការងារផ្សេងៗ	1) ផ្តល់ព័ត៌មានស្តីពីការងារ	X	X	X
	2) ផ្តល់ព័ត៌មានស្តីពីការងារ	X	X	
	3) ការងារផ្សេងៗ	X	X	
	4) ការងារផ្សេងៗ	X		
ការងារប្រមូលព័ត៌មាន	1) ផ្តល់ព័ត៌មានស្តីពីការងារ (Image, GIS data)	X	X	
	2) ការងារប្រមូលព័ត៌មាន	X	X	X
GIS	1) ការងារផ្សេងៗ	X		
	2) ការងារផ្សេងៗ	X	X	
ការងារប្រតិបត្តិការ	1) ការងារផ្សេងៗ	X	X	
	2) ការងារផ្សេងៗ	X	X	X

ក្នុងនាមសម្រាប់ការការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់

ឈ្មោះ	ប្រភេទ	ទំហំ	បណ្តាញ	ប្រភេទ	ប្រភេទ
ការដឹកជញ្ជូន ការដឹកជញ្ជូន	1) ការដឹកជញ្ជូនដោយយានយន្ត	x	x	x	
	2) វិទ្យុស៊ីម ឌីជីថល វិទ្យុស៊ីម	x			x
	3) ការដឹកជញ្ជូនដោយយានយន្ត	x	x	x	x
ការដឹកជញ្ជូន និង ការដឹកជញ្ជូន	1) ការដឹកជញ្ជូនដោយយានយន្ត	x	x	x	
	2) ការដឹកជញ្ជូនដោយយានយន្ត	x	x	x	
	3) ការដឹកជញ្ជូនដោយយានយន្ត	x	x	x	x
ការដឹកជញ្ជូន និង ការដឹកជញ្ជូន	1) ការដឹកជញ្ជូនដោយយានយន្ត	x	x	x	
	2) ការដឹកជញ្ជូនដោយយានយន្ត	x	x	x	x
	3) ការដឹកជញ្ជូនដោយយានយន្ត	x	x	x	x
ការដឹកជញ្ជូន	1) ការដឹកជញ្ជូនដោយយានយន្ត	x	x		
	2) ការដឹកជញ្ជូនដោយយានយន្ត	x	x		
	3) ការដឹកជញ្ជូនដោយយានយន្ត	x	x		



**សូមអរគុណសម្រាប់ការយក
ចិត្តស្តាប់!**

គម្រោងពង្រឹងសមត្ថភាពលើការពិចារណាផ្នែកបរិស្ថាន និងសង្គមក្នុងអង្គការប្រតិបត្តិក្នុងវិស័យផ្លូវថ្នល់ក្នុងព្រះរាជាណាចក្រកម្ពុជា (CESCoR)

ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ ក្នុងប្រទេសកម្ពុជា

លោក ជា សំណែន*

* 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.

1

2. គ្រោងការណ៍គ្រប់គ្រងដីចំណីផ្លូវ សំរាប់ការអភិវឌ្ឍន៍ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ

2.1 គំរូនៃការដាច់ដី

Pic.1 គំរូនៃប្រព័ន្ធគ្រប់គ្រងដី

Fig.2 ទីតាំងគោលដៅនៃគម្រោងអង្គការប្រតិបត្តិក្នុងវិស័យផ្លូវថ្នល់

5

មាតិកា

- សេចក្តីផ្តើម
- គ្រោងការណ៍គ្រប់គ្រងដីចំណីផ្លូវ សំរាប់ការអភិវឌ្ឍន៍ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ
 - គំរូនៃការដាច់ដី
 - ការគ្រប់គ្រងដីចំណីផ្លូវ ក្នុងប្រទេសកម្ពុជា
 - ការប្រើប្រាស់ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ
- វិធីសាស្ត្រ
 - ប្រើប្រាស់យានយន្ត អាកាសយាន UAV
 - ការប្រើប្រាស់យានយន្ត អាកាសយាន អ៊ីនតឺណិត
 - វិធីសាស្ត្រដីចំណីផ្លូវ អាកាសយាន អ៊ីនតឺណិត និង ការប្រើប្រាស់ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ
 - វិធីសាស្ត្រការងារការងារវិស័យផ្លូវថ្នល់ក្នុងប្រទេសកម្ពុជា
- សេចក្តីសន្និដ្ឋាន

2

2. គ្រោងការណ៍គ្រប់គ្រងដីចំណីផ្លូវ សំរាប់ការអភិវឌ្ឍន៍ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ

2.2 ដីចំណីផ្លូវ ក្នុងប្រទេសកម្ពុជា

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 Others	30 m(※3)	30 m(※3)
2-digits Number National Roads		25 m(※3)	25 m(※3)
Provincial roads		20 m(※3)	Prakas 06
Commune Roads		15m(※3)	Not specified

※1 Ministerial Orders No. 06, 1999, 6
 ※2 Sub-Decree No.197, 2009 ※3 length from the centerline

1. សេចក្តីផ្តើម (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. គ្រោងការណ៍គ្រប់គ្រងដីចំណីផ្លូវ សំរាប់ការអភិវឌ្ឍន៍ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ

2.3 ការប្រើប្រាស់ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវ

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.

7

1. សេចក្តីផ្តើម (2)

RMS

Fig.1 Conceptual Diagram of RMS

4

3. វិធីសាស្ត្រ

Fig.3 វិធីសាស្ត្រនៃការប្រើប្រាស់ប្រព័ន្ធគ្រប់គ្រងដីចំណីផ្លូវក្នុងប្រទេសកម្ពុជា

8

3. វិធីសាស្ត្រ
3.1 រ៉ូបូតនាវាសម្រាប់យានអាកាស UAV(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 9

3. វិធីសាស្ត្រ
3.4 វិធីសាស្ត្រការងារការពារនិងគ្រប់គ្រងដីស្រូវតាមបណ្តោយផ្លូវ (IEP)



Soft Measures
-Patrol
-Dissemination
etc.

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

Fig.5 Typical Measures for IEP

13

3.1 រ៉ូបូតនាវាសម្រាប់យានអាកាស UAV(2)



Fig.4 Conceptual Diagram of UAV Flight Survey 10



3. វិធីសាស្ត្រ
3.2 ការផ្តល់ទិន្នន័យទិន្នន័យទិន្នន័យ

➢ 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.

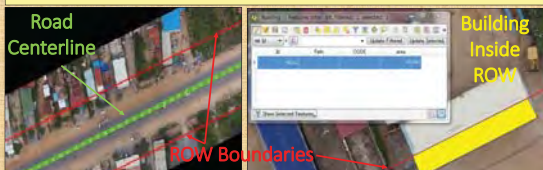


Fig.5 Data Production on Ortho of Road centerlines, ROW Boundaries and buildings inside ROW 11

3. វិធីសាស្ត្រ
3.3 ប្រព័ន្ធគ្រប់គ្រងទិន្នន័យ និងការប្រើប្រាស់ទិន្នន័យ

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.

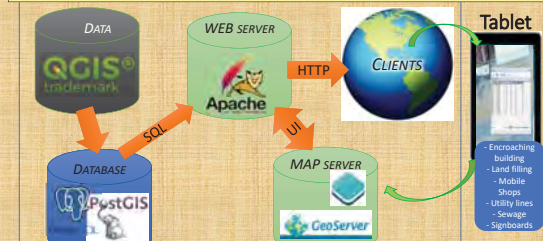


Fig.6 Conceptual Diagram of Database 12

គម្រោងសាកល្បង ការការពារការទន្ទ្រានដីចំណី ផ្លូវខុសច្បាប់

គម្រោងពង្រឹងសមត្ថភាពលើការពិចារណាផ្នែក
បរិស្ថាន និងសង្គមក្នុងអង្គការព្រឹត្តិការណ៍លើវិស័យ
ផ្លូវខុសច្បាប់

គំនិតគោល (CONCEPT)

- លទ្ធផលដែលទទួលបានពីការសិក្សាស្ថានភាពបច្ចុប្បន្ន(CSI) គឺប្រើប្រាស់វិធីសាស្ត្រសម្រាប់ការការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់។
- ការការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ក្នុងតំបន់ដែលមានលក្ខណៈសមស្រប ដើម្បីការពារការប្រើប្រាស់ខុសច្បាប់ ឬមិនសមស្របក្នុងដីចំណីផ្លូវ។

ការអនុវត្តវិធីសាស្ត្រការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់

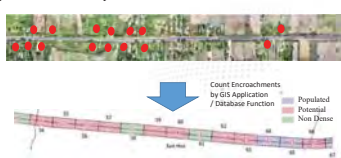
- យល់ពីទិន្នន័យដែលបានរៀបចំក្នុងការសិក្សាស្ថានភាពបច្ចុប្បន្ន (CSI)

CSI_P	CODE	ITEM	CSI_A	1000 ROW	CSI_L	5000 1dlig. NH
	1001	Building		1001 building		6000 local road_paved
	1002	Building Under construction		1002 filling concrete		7000 local road_unpaved
	1003					
	1004	Factory		4000 builtup area		
	1005	Commercial		4001 open area		
	1006	Residential		4020 parking		
	1007	Mobile cart		4030 wet land		
	1008	Temporary booth		4040 rice field		
	1009	Public		4050 bush		
	1010	Shed		4060 Urban area		
	1011	Well				
	1012	Cemetery				
	1013	School Public				
	1014	School Private				
	1015	Pavoda				
	2001	Unpaved Access Road				
	2002	Land filling				
	2003	Sewage				
	2004	Paved Access Road				
	3001	RM post				
	3002	Pylon L				
	3003	Pylon R				
	3004	Street light				
	3005	Signboard_public				
	3006	Signboard_private				
	3333	ROW pole				
	3999	GCP				
	4001	Open area				
	4002	Parking				
	9999	with Description				

គំនិតគោលក្នុងការធ្វើចំណាត់ថ្នាក់ការការពារការទន្ទ្រានដី ចំណីផ្លូវខុសច្បាប់

- បង្កើតចំណាត់ថ្នាក់ចំនួន ៣ប្រភេទដោយផ្អែកលើលក្ខណៈបរិស្ថានភាពនៃការទន្ទ្រានដីផ្សេងៗ។
(1) តំបន់ទីរួមជុំនីមួយៗ (2) តំបន់សក្តានុពល និង (3) តំបន់ដែលមានប្រជាជនរស់នៅកើត
- ចំណាត់ថ្នាក់តំបន់សម្រាប់ផែនការការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ ធ្វើឡើងដោយផ្អែកលើចំនួននៃសំណង់ដែលបានទន្ទ្រាន។
- ចំណាត់ថ្នាក់គឺជា **ប្លុក (Block unit)**

Classification	Abstraction
Populated (Dense)	So many buildings exist in the ROW area.
Potential (Semi-Dense)	Many buildings exist in the ROW area, but the majority of them are displaceable easily.
Non Dense (Open, Few House)	Several buildings exist in the ROW area. The empty area does not exist there.



លក្ខន្តិកៈសម្រាប់ជ្រើសរើសការការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់

- ដើម្បីរៀបចំផែនការគម្រោងសាកល្បងសម្រាប់ការការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ គ្រប់ការងារពិចារណាលើ៖
 - បង្កើតលក្ខន្តិកៈសម្រាប់ជ្រើសរើសការការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ ដើម្បីធ្វើចំណាត់ថ្នាក់តំបន់អភិភាព (a) ទ្រូល (b) មធ្យម និង (m) ទាប
 - ជ្រើសរើសតំបន់អភិភាពសម្រាប់ការអនុវត្តវិធីសាស្ត្រការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់
 - ធ្វើវិសោធនកម្មវិធីសាស្ត្របញ្ជាតាមផែនការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ និងវិសោធនកម្មវិធីសាស្ត្រការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ទៅក្នុងទិន្នន័យគោលសម្រាប់ការប្រើប្រាស់ដីចំណីផ្លូវខុសច្បាប់ និងអភិវឌ្ឍន៍ប្រកបដោយ (Function) សម្រាប់ទិន្នន័យគោលក្នុងគ្រប់តំបន់ដីចំណីផ្លូវខុសច្បាប់

Criteria 1	Criteria 2	Criteria 3	Criteria 4	Criteria 5
open area 4001	filing_unpaved 2001	building 1001	mobile shop 1007	wet land 4030
bush 4050		builtup area 4000		rice field 4040
At least 30%	N/A	N/A	N/A	N/A
N/A	At least 1	N/A	N/A	N/A
N/A	N/A	At least 60%	N/A	N/A
N/A	N/A	N/A	at least 60	N/A
N/A	High	N/A	N/A	At least 60%
N/A	N/A	N/A	Middle	Low

Hard Apprao ches	ROW Pole, Fence, Signboard	ROW Pole	ROW Pole, ROW Marking Plate	ROW Pole, ROW Marking Plate, Guard Fence	Growing Tree
------------------	----------------------------	----------	-----------------------------	--	--------------

គ្រោងការសម្រាប់វិធីសាស្ត្រការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់

- ចំនុចសម្រាប់ការពិភាក្សា

ស្ថានភាពសម្រាប់គម្រោងនានា	សកម្មភាពសម្រាប់គម្រោងដែលមានស្រាប់				
	វិធីសាស្ត្រវិប	ការតម្កល់វិញ	ការអនុញ្ញាត និងការចុះបញ្ជី	វិធីសាស្ត្រទម្រង់ និងការអនុវត្ត	ការលើកកម្ពស់ការយល់ដឹង
អំពីប្រទេសដែលមានប្រជាជនច្រើន	លំដាប់ខ្ពស់បំផុត	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន
លំដាប់ខ្ពស់បំផុត	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន
អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន	អំពីប្រទេសដែលមានប្រជាជនច្រើន

វិធីសាស្ត្រការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ ដែលត្រូវពិភាក្សា

- ប្រភេទវិធីសាស្ត្រទទេ

ការលើកកម្ពស់ការយល់ដឹង



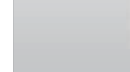
ការប្រជុំពិភាក្សាជាសាធារណៈ ដែលនឹងត្រូវរៀបចំ គោលដៅ៖ ប្រជាជន និងសិស្សានុសិស្ស

ការត្រួតពិនិត្យ និងការអនុវត្ត



ការចុះបញ្ជី និងការអនុវត្តការងារតាមផ្ទះ គោលដៅ៖ អ្នកជំនាញ និងអ្នកអនុវត្តការងារ

ការអនុញ្ញាត និងការចុះបញ្ជី



ការចុះបញ្ជី និងការអនុវត្តការងារតាមផ្ទះ គោលដៅ៖ អ្នកជំនាញ និងអ្នកអនុវត្តការងារ

ការលើកកម្ពស់ការយល់ដឹង

វិធីសាស្ត្រ កំណត់	ការលើកកម្ពស់ការយល់ដឹងរបស់ប្រជាជនជាមួយផ្លូវដីចំណីផ្លូវខុសច្បាប់
អ្នកកាត់កម្ម	អាចធ្វើវាបានតាមរយៈការប្រជុំពិភាក្សាជាសាធារណៈ ឬទូរគមនាគមន៍
ចំណាយ (ពេល និង ខ្លួន)	ប្រជាជន មេធាវី និងមន្ត្រី (ក្រសួងមហាផ្ទៃ)



សំនើ៖ គ្រោងការសម្រាប់ការលើកកម្ពស់ការយល់ដឹងរបស់ប្រជាជនជាមួយផ្លូវដីចំណីផ្លូវខុសច្បាប់ គោលដៅ៖ អ្នកជំនាញ និងអ្នកអនុវត្តការងារ

ទីតាំង	កែវគ្រឹះការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់
អ្នកចូលរួម	ប្រហែល ៥០នាក់ ពីរដ្ឋ

ការលើកកម្ពស់ការយល់ដឹង

ការប្រជុំគ្រោះយោបល់សាធារណៈជាមួយនិស្សិត និងសិស្ស

វិធីសាស្ត្រ	ការលើកកម្ពស់ការយល់ដឹងរបស់និស្សិត ឬសិស្សពីដំណើរការ
កំណត់ត្រា	- គិតគោលនូវព័ត៌មានលម្អិត គួរតែបញ្ចូលក្នុងកម្មវិធីសិក្សារបស់វិទ្យាល័យ ដែលជាផ្នែកនៃសន្តិសុខសិស្ស - រៀបចំសិក្ខាសាលាស្តីពីការគ្រប់គ្រងជំងឺ និងការពារជំងឺ និងការពារជំងឺស្រូវសំបូរ - ជាប្រធានបទសម្រាប់ការពិភាក្សាអង្គការសិស្សសិស្សក្នុងស្ថានភាពសិស្ស
អ្នកពាក់ព័ន្ធ	សិស្សវិទ្យាល័យ ឬសិស្សមហាវិទ្យាល័យ (ក្រសួងអប់រំ យុវជន និងកីឡា)
ចំណាយ (ទាប និងខ្ពស់)	ចំណាយទាប

សំនើ:
ក្រសួង និងមន្ទីរសាធារណការ និងដឹកជញ្ជូន នឹងទទួលខុសត្រូវក្នុងការរៀបចំ កិច្ចប្រជុំគ្រោះយោបល់សាធារណៈ ម្តងម្កាលក្រោយ ក្រុមការងារសាធារណៈ និងផ្តល់ជាដៃគូការងារ ផ្នែកយុវជន ឬសិស្សសិស្សក្នុងស្ថានភាពសិស្ស

ទីតាំង	វិទ្យាល័យ ឬកន្លែងសិក្សាល័យ?
អ្នកទទួលខុសត្រូវ	សិស្សសិស្សក្នុងស្ថានភាពសិស្ស? តើមានចំណុចអ្វីខុសគ្នា?

ការលើកកម្ពស់ការយល់ដឹង

កិច្ចប្រជុំពិភាក្សាស្តីពីការការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់

វិធីសាស្ត្រ	ការលើកកម្ពស់ការយល់ដឹងរបស់មន្ត្រីស្តីពីការគ្រប់គ្រងដីចំណីផ្លូវ
កំណត់ត្រា	- រៀបចំសិក្ខាសាលាស្តីពីការគ្រប់គ្រងដីចំណីផ្លូវសម្រាប់អាជ្ញាធរ និងភ្នាក់ងារដែលពាក់ព័ន្ធ - ក្នុងកិច្ចប្រជុំគ្រោះយោបល់សាធារណៈ ឬប្រជុំ ស្តារភាពដឹងដល់មន្ត្រីតំណាងរាស្ត្រ និងមន្ត្រីស្រុក - រៀបចំសិក្ខាសាលាស្តីពីការគ្រប់គ្រងដីចំណីផ្លូវសម្រាប់អាជ្ញាធរ និងភ្នាក់ងារដែលពាក់ព័ន្ធ - រៀបចំសិក្ខាសាលាស្តីពីការគ្រប់គ្រងដីចំណីផ្លូវសម្រាប់អាជ្ញាធរ និងភ្នាក់ងារដែលពាក់ព័ន្ធ
អ្នកពាក់ព័ន្ធ	អាជ្ញាធរមូលដ្ឋាន មន្ត្រីស្រុកស្រីស្រែ (ក្រសួងមហាផ្ទៃ និងក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់)
ចំណាយ (ទាប និងខ្ពស់)	ចំណាយទាប

សំនើ:
តើមានមតិយោបល់បន្ថែមលើវិធីសាស្ត្ររៀបចំ កាលវិភាគ និងមតិយោបល់

ការត្រួតពិនិត្យ និងការអន្តរាគមន៍

គុណការ

វិធីសាស្ត្រ	បណ្តឹងទៅគុណការ
កំណត់ត្រា	បើសិនជាបញ្ហាមានដោះស្រាយបាន ការពិនិត្យផ្ទៃក្នុង ឬសកម្មភាពជាក់លាក់ ណាមួយនឹងដាក់ជាបណ្តឹងទៅគុណការ
អ្នកពាក់ព័ន្ធ	មន្ទីរ (ក្រសួងសាធារណការ និងដឹកជញ្ជូន) និងអាជ្ញាធរមូលដ្ឋាន និងប៉ូលីស (ក្រសួងមហាផ្ទៃ)
ចំណាយ (ទាប និងខ្ពស់)	ចំណាយតិច

សំនើ:
តើមាននីតិវិធីច្បាប់ដែរឬទេ?

ការអនុញ្ញាត និងការចុះបញ្ជី

ការអនុញ្ញាត

វិធីសាស្ត្រ	ការអនុញ្ញាតប្រើប្រាស់ដីចំណីផ្លូវ
កំណត់ត្រា	ប្រជាពលរដ្ឋអាចស្នើសុំការអនុញ្ញាត បើសិនជាគាត់ចង់ប្រើប្រាស់ដីនៅក្នុងដីចំណីផ្លូវជាបណ្តោះអាសន្ន ឬក្រុមហ៊ុនឯកជនចង់តម្កើងបរិក្ខារ
អ្នកពាក់ព័ន្ធ	មន្ទីរ (ក្រសួងសាធារណការ និងដឹកជញ្ជូន) និងអាជ្ញាធរមូលដ្ឋាន (ក្រសួងមហាផ្ទៃ)
ចំណាយ (ទាប និងខ្ពស់)	ចំណាយតិច

សំនើ:
តើអាចទៅរួចដែរឬទេ?
តើអ្នកណាជាអ្នកផ្តល់សិទ្ធិសាងសង់?

ការត្រួតពិនិត្យ និងការអន្តរាគមន៍

ការល្បាត

វិធីសាស្ត្រ	ការលើកកម្ពស់សកម្មភាពល្បាតទៀងទាត់ដើម្បីការពារការទន្ទ្រានដីចំណីផ្លូវ
កំណត់ត្រា	- មន្ត្រីមន្ទីរ ឬមន្ត្រីការិយាល័យសាធារណការស្រុក ចុះល្បាតការទន្ទ្រានដីចំណីផ្លូវ ដែលជាផ្នែកក្នុងកម្មវិធីការពារដីចំណីផ្លូវ - បើសិនជាមានបញ្ហាណាមួយ មន្ត្រីត្រូវតែយកមករាយការណ៍ដល់អាជ្ញាធរមូលដ្ឋានឱ្យបានឆាប់រហ័ស - បើសិនជាមានបញ្ហាណាមួយ មន្ត្រីត្រូវតែយកមករាយការណ៍ដល់អាជ្ញាធរមូលដ្ឋានឱ្យបានឆាប់រហ័ស និងដឹកជញ្ជូន ឱ្យបានឆាប់រហ័ស
អ្នកពាក់ព័ន្ធ	មន្ត្រីមន្ទីរ និងមន្ត្រីការិយាល័យសាធារណការស្រុក (ក្រសួងសាធារណការ និងដឹកជញ្ជូន)
ចំណាយ (ទាប និងខ្ពស់)	ចំណាយទាប

សំនើ:
ថ្ងៃស្អែក យើងនឹងទៅរួមប្រជុំ និងអនុវត្តការល្បាត ជាឧទាហរណ៍។ តើមានបញ្ហា ឬយើងអាចមើលរំខងអ្វីបាន?

ការត្រួតពិនិត្យ និងការអន្តរាគមន៍

ការអនុញ្ញាត

វិធីសាស្ត្រ	ការអនុញ្ញាតសាងសង់ផ្លូវថ្នល់
កំណត់ត្រា	ប្រជាពលរដ្ឋអាចស្នើសុំការអនុញ្ញាត បើសិនជាគាត់ចង់ចាក់បំពេញដីនៅក្នុងដីចំណីផ្លូវ
អ្នកពាក់ព័ន្ធ	មន្ទីរសាធារណការ និងដឹកជញ្ជូន (ក្រសួងសាធារណការ និងដឹកជញ្ជូន)
ចំណាយ (ទាប និងខ្ពស់)	ចំណាយទាប

សំនើ:
តើអាចទៅរួចដែរឬទេ?
តើអ្នកណាជាអ្នកផ្តល់សិទ្ធិសាងសង់?

ការត្រួតពិនិត្យ និងការអន្តរាគមន៍

កិច្ចសហការ

វិធីសាស្ត្រ	ការលើកកម្ពស់កិច្ចសហការរវាងប៉ូលីស និងអាជ្ញាធរមូលដ្ឋាន និងមន្ទីរសាធារណការ និងដឹកជញ្ជូន
កំណត់ត្រា	មន្ត្រីប៉ូលីស ឬមន្ត្រីអាជ្ញាធរមូលដ្ឋាន និងមន្ទីរសាធារណការ និងដឹកជញ្ជូន អាជ្ញាធរមូលដ្ឋាននឹងសហការជាមួយប៉ូលីសមូលដ្ឋាន និងមន្ត្រីមន្ទីរដើម្បីយល់ពីបញ្ហាណាមួយដែលកំពុងកើតឡើង បើសិនជាមានបញ្ហាណាមួយ អាជ្ញាធរមូលដ្ឋាននឹងចាត់វិធានការសមស្របឱ្យបានឆាប់រហ័ស
អ្នកពាក់ព័ន្ធ	មន្ទីរ (ក្រសួងសាធារណការ និងដឹកជញ្ជូន) និងអាជ្ញាធរមូលដ្ឋាន និងប៉ូលីស (ក្រសួងមហាផ្ទៃ)
ចំណាយ (ទាប និងខ្ពស់)	ចំណាយទាប

សំនើ:
តើបច្ចុប្បន្នអ្នកធ្វើកិច្ចសហការតាមរបៀបណា? តើអាចទៅរួចទេ?

ការត្រួតពិនិត្យ និងការអន្តរាគមន៍


ការចុះបញ្ជី

វិធីសាស្ត្រ	ការចុះបញ្ជីដីចំណីផ្លូវ
កំណត់ត្រា	ដីចំណីផ្លូវចុះបញ្ជីត្រូវតែមានការអនុញ្ញាតពីអាជ្ញាធរមូលដ្ឋាន និងមន្ទីរសាធារណការ និងដឹកជញ្ជូន
អ្នកពាក់ព័ន្ធ	ក្រសួងរៀបចំដែនដី នគរូបនីយកម្ម និងសំណង់
ចំណាយ (ទាប និងខ្ពស់)	តម្លៃទាប

សំនើ: តើអាចទៅរួចដែរឬទេ?


**សូមអរគុណសម្រាប់ការយក
ចិត្តស្តាប់!**



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

Overview of IEP Hard Approach in Pilot Project

27th March 2019



1

Contents of This Material

1. Working Items
2. Target Area
3. Schedule
4. Criteria

2

1

1

Working Items in Pilot Project

Planned are these working items in Pilot Project

IEP Soft Approached

1. IEP Consultation Meeting
2. Public Consultation Meeting (PCM)
3. Patrol

IEP Hard Approaches

1. ROW Pole
2. Fence for Encroachment Prevention (IEP Fence)
3. Signboard
4. ROW Marking Plate
5. Fence for Prevention of Pedestrian Crossing (Pedestrian Fence)
6. Growing Tree

5

5

Image of Working Items



6

6

3

1. Working Items

3

3

Working Items of IEP

Planned are two type, IEP Soft and Hard Approaches.

Activities for Future Project		Activities for Existing Project		
Hard Approach		Soft Approach		
New Road Design	Installing Facilities	Permission and Registration	Monitoring and Intervention	Raising awareness
Digging channels as ROW boundary from the edge of ROW, the middle and keep empty space in Constructing sub-road as ROW boundary	ROW marking plate Highlighting color on the Growing tree Signboard Pole	ROW use permit ROW registration Access road permit	Regular patrol activities Appealing to the court Collaborating with local authorities	local people High school and university students Local governmental official

4

4


2. Target Area

7

7

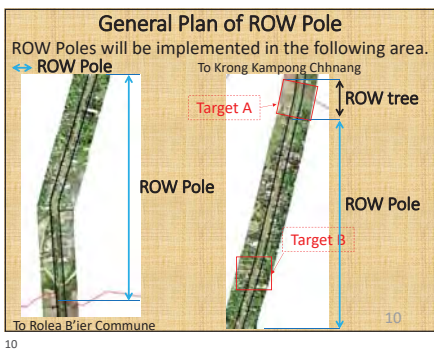
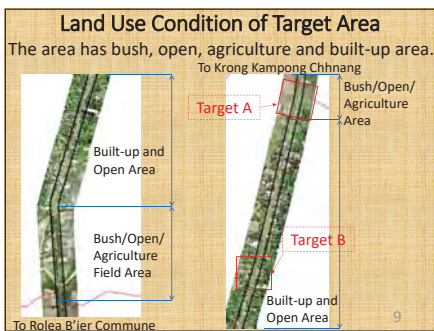
Location Map of Target Area

Target Area is **Chrey Bak Commune**, located at south of Krong Kampong Chhnang.



8

8



10

5

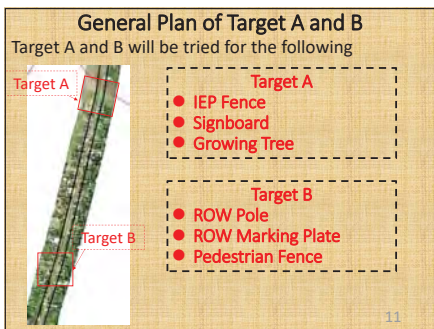


13



14

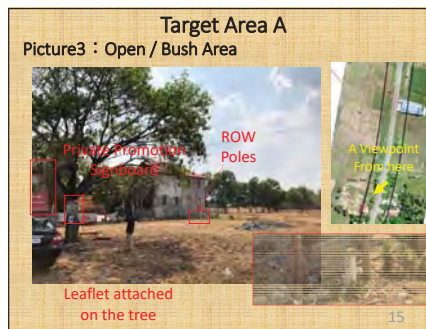
7



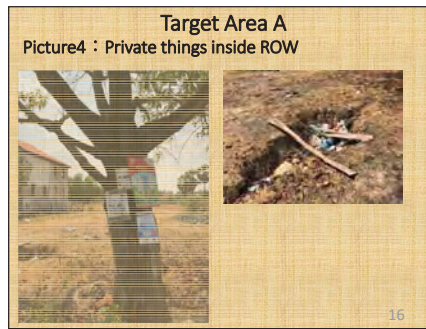
11



12



15

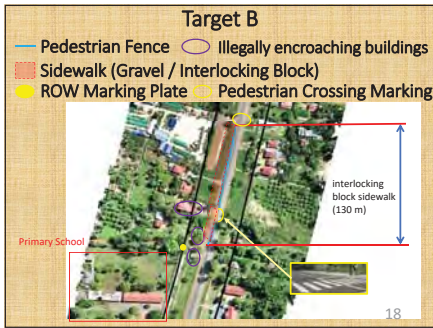


16

8



17



18

9



21

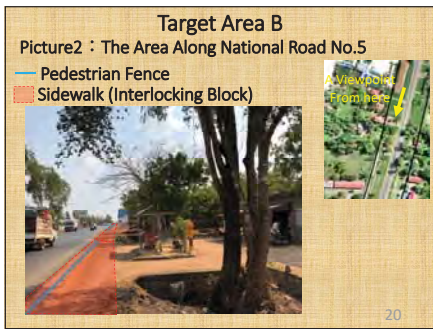


22

11



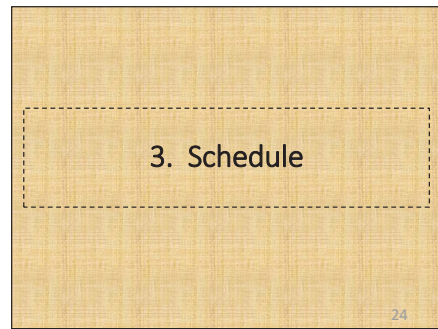
19



20



23



24

Schedule of IEP hard Approach

IEP Hard Approaches in Pilot Project are planned as the following Table.

Item	Date
Invitation to Contractor	3 rd April 2019
Signing of Contract	9 th April 2019
Kick-off Meeting	10th April 2019
Construction starts	22nd April 2019
Contractual maturity date	31 st July 2019

Please kindly let us adjust kick-off Meeting between public relevant officials and the Contractor to commence the construction work.

25

4. Criteria

26

13

Criteria and IEP Approaches (Tentative)

IEP Priority will be decide based on several Criteria.

Criteria 1		Criteria 2		Criteria 3		Criteria 4		Criteria 5			
open area	4001	filling	unpaved	2001	building	1001	Temporary Booth	1008	wet land	4030	
bush	4050				bulldoz area	4000			rice field	4040	
At least 30%		N/A			N/A		N/A		N/A		
N/A		At least 1			N/A		N/A		N/A		
N/A		N/A		At least 60%			N/A		N/A		
N/A		N/A		N/A		at least 60			N/A		
N/A		N/A		N/A		N/A		N/A	At least 60%		
N/A		N/A		N/A		N/A		N/A	N/A		
High				Middle				Low			

27

Criteria and IEP Hard Approaches (Tentative)

Criteria decides what hard approach should be done.

Criteria	IEP Hard Approach					
	ROW Poles	IEP Fence	Signboard	Marking ROW plate	Pedestrian Fence	Growing tree
1	▲	●	●			▲
2	●					
3	●			●		
4	●				●	
5						●
6	●					

Target A (Criteria 1, 2, 4, 5)
Target B (Criteria 3, 6)

※ Target B is not actual Criteria 3 area. But, In Pilot Project of JICA project, resettlement can't be implemented easily, so less buildings area is chosen for Pilot Project to try each IEP hard approach.

28

**បញ្ជីសំណួរសម្រាប់កិច្ចប្រជុំពិភាក្សាស្តីពីការការពារការទន្ទ្រានដ៏ចំណីផ្លូវខុសច្បាប់
ថ្ងៃទី ២៧ និងទី២៨ ខែមិថុនា ឆ្នាំ២០១៩**

កាលបរិច្ឆេទ: _____
 ទីតាំង: _____
 ឈ្មោះ: _____
 គូនាទី: _____
 អង្គភាព: _____

1. គោលបំណង:

1.1 តើគោលបំណងនៃកិច្ចប្រជុំច្បាស់លាស់ដែរឬទេ?

មិនច្បាស់ <-----> ច្បាស់លាស់

1	2	3	4	5
---	---	---	---	---

2. ជារួម:

2.1 តើរយៈពេលប្រជុំសមស្របសម្រាប់អ្នកដែរឬទេ?

ខ្លីពេក <-----> វែងពេក

1	2	3	4	5
---	---	---	---	---

2.2 តើមតិកា ឬខ្លឹមសារប្រជុំសមស្របសម្រាប់អ្នកដែរឬទេ?

មិនគ្រប់គ្រាន់ <-----> សមស្រប

1	2	3	4	5
---	---	---	---	---

2.3 ព័ត៌មាន ឬយោបល់បន្ថែមដែលអ្នកមានសម្រាប់កិច្ចប្រជុំ?

3. បទបង្ហាញ

3.1 ប្រធានបទគួរឱ្យចាប់អារម្មណ៍ដែរឬទេ?

មិនចាប់អារម្មណ៍សោះ <-----> ចាប់អារម្មណ៍ខ្លាំង

1	2	3	4	5
---	---	---	---	---

3.2 តើអ្នកយល់ពីបទបង្ហាញដែរឬទេ?

មិនយល់<-----> យល់

1	2	3	4	5
---	---	---	---	---

3.3 តើបទបង្ហាញមានសារៈប្រយោជន៍សម្រាប់អ្នកដែរឬទេ?

មិនមានសារៈប្រយោជន៍ទេ<-----> មានសារៈប្រយោជន៍

1	2	3	4	5
---	---	---	---	---

4. មតិយោបល់ សំណូមពរ និងព័ត៌មានបន្ថែម



កិច្ចប្រជុំពិគ្រោះយោបល់ជាសាធារណៈ
ស្តីពី
ការលើកកម្ពស់សមត្ថភាពយល់ដឹងស្តីពីការ
ប្រើប្រាស់ដីចំណីផ្លូវ

គម្រោងស្តីពីការពង្រឹងសមត្ថភាពលើការពិចារណាផ្នែក បរិស្ថាន និងសង្គមក្នុងអង្គភាព
 ប្រតិបត្តិលើវិស័យផ្លូវថ្នល់ក្នុងព្រះរាជាណាចក្រកម្ពុជា
(CESCOR)



សាលប្រជុំស្រុករលាបៀរ ខេត្តកំពង់ឆ្នាំង
 ថ្ងៃសៅរ៍ ទី២០ ខែមេសា ឆ្នាំ២០១៩



FOR MORE INFORMATION CONTACT: OFFICE +855(0)61-960-213


របៀបវារៈ

កិច្ចប្រជុំពិគ្រោះយោបល់ជាសាធារណៈ


ស្តីពីការលើកកម្ពស់សមត្ថភាពយល់ដឹងលើការប្រើប្រាស់ដីចំណីផ្លូវ
និងសកម្មភាពរបស់គម្រោងស្តីពីការពង្រឹងសមត្ថភាពលើការពិចារណាផ្នែក បរិស្ថាន និង
សង្គមក្នុងអង្គការប្រតិបត្តិលើវិស័យផ្លូវថ្នល់ក្នុងព្រះរាជាណាចក្រកម្ពុជា (CESCoR)

សាលប្រជុំស្រុករលាបៀរ ថ្ងៃសៅរ៍ ទី២០ ខែមេសា ឆ្នាំ២០១៩

ម៉ោង	កម្មវិធី
08:00 - 08:30	ចុះឈ្មោះចូលរួម
08:30 - 08:40	សុន្ទរកថាលើកកម្មវិធី ប្រធាននាយកដ្ឋានហេដ្ឋារចនាសម្ព័ន្ធផ្លូវថ្នល់ ក្រសួងសាធារណការ និងដឹកជញ្ជូន
08:40 - 08:45	ការពន្យល់ពីកម្មវិធី និងបញ្ជីសំនួរ មន្ត្រី ក្រសួងសាធារណការ និងដឹកជញ្ជូន
08:45 - 09:00	ការពន្យល់ពីច្បាប់ បទបញ្ញត្តិ មុខងារ និងការប្រើប្រាស់ដីចំណីផ្លូវ ប្រធានការិយាល័យដីចំណីផ្លូវ ក្រសួងសាធារណការ និងដឹកជញ្ជូន
09:00 - 09:10	ការពន្យល់ពីសកម្មភាពរបស់អាជ្ញាធរមូលដ្ឋានក្នុងការគ្រប់គ្រងដីចំណីផ្លូវ មន្ត្រីបច្ចេកទេស មន្ទីរសាធារណការ និងដឹកជញ្ជូនខេត្តកំពង់ឆ្នាំង
09:10 - 09:20	ការពន្យល់ពីសកម្មភាពការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ សមាជិកក្រុមគម្រោងចែក
09:20 - 09:40	វគ្គសំនួរ និងចម្លើយ
09:40 - 09:50	វគ្គបំពេញបញ្ជីសំនួរ
09:50 - 10:05	វគ្គប្រគល់លិខិតបញ្ជាក់ការចូលរួម សាលារៀនប្រែប្រាស់
10:05 - 10:10	សុន្ទរកថាបិទកម្មវិធី មន្ត្រី ក្រសួងសាធារណការ និងដឹកជញ្ជូន
10:10 - 10:20	ថតរូបអនុស្សាវរីយ៍

គម្រោងស្តីពីការពង្រឹងសមត្ថភាពលើការពិចារណាផ្នែកបរិស្ថាន និងសង្គមក្នុងអង្គការប្រតិបត្តិលើវិស័យផ្លូវថ្នល់ក្នុងព្រះរាជាណាចក្រកម្ពុជា (CESCoR) 

សេចក្តីសង្ខេបពីវិធីសាស្ត្រការពារការរំលោភដីចំណីផ្លូវខុសច្បាប់



ខេត្តកំពង់ឆ្នាំង
ថ្ងៃទី២០ ខែមេសា ឆ្នាំ២០១៩

1

ប្រភេទវិធីសាស្ត្រទន់

កិច្ចប្រជុំពិគ្រោះយោបល់ជាសាធារណៈ
ការប្រជុំពិគ្រោះជាសាធារណៈ ដែលនឹងត្រូវរៀបចំ
គោលដៅ: ប្រជាពលរដ្ឋ សិស្សានុសិស្ស និងមន្ត្រីពាក់ព័ន្ធ
គោលបំណង: បង្កើតការយល់ដឹងស្តីពីដីចំណីផ្លូវ និងការប្រើប្រាស់ដីចំណីផ្លូវដោយប្រយោជន៍

ការត្រួតពិនិត្យ និងការអន្តរាគមន៍
ការចុះល្បាត និងការណែនាំផ្នែកអន្តរាគមន៍
គោលដៅ: មន្ត្រីមន្ទីរសាធារណការ និងដឹកជញ្ជូន មន្ត្រីស្រុក និងអាជ្ញាធរមូលដ្ឋាន
គោលបំណង: ការពិនិត្យទូទៅ និងការណែនាំ ការងារដែលមានប្រសិទ្ធភាពជាមួយ
ផែនការស្តីពីការត្រួតពិនិត្យ និងការណែនាំផ្នែកអន្តរាគមន៍

ការអនុញ្ញាត និងការចុះបញ្ជី
ការចុះបញ្ជី និងការអនុញ្ញាតលើការប្រើប្រាស់ដីចំណីផ្លូវ គឺត្រូវបាន
គោលដៅ: មន្ត្រីមន្ទីរសាធារណការ និងដឹកជញ្ជូន មន្ត្រីស្រុក និងអាជ្ញាធរមូលដ្ឋាន
គោលបំណង: ឯកសារអនុញ្ញាត និងកំណត់ត្រាកសិករ

មាតិកា

១. វិធីសាស្ត្រការពារការរំលោភដីចំណីផ្លូវខុសច្បាប់
២. តំបន់គោលដៅ
៣. កាលវិភាគការងារ

2

ប្រភេទវិធីសាស្ត្ររឹងសម្រាប់ការពារការរំលោភដីចំណីផ្លូវខុសច្បាប់



6

១. វិធីសាស្ត្រការពារការរំលោភដីចំណីផ្លូវខុសច្បាប់

3

២. តំបន់គោលដៅ

7

វិធីសាស្ត្រការពារការរំលោភដីចំណីផ្លូវខុសច្បាប់ដែលត្រូវអនុវត្តក្នុងគម្រោងសាកល្បង

វិធីសាស្ត្រទន់សម្រាប់ការពារការរំលោភដីចំណីផ្លូវខុសច្បាប់

- កិច្ចប្រជុំពិគ្រោះយោបល់ជាសាធារណៈ (ប្រជាពលរដ្ឋ សិស្សានុសិស្ស និងមន្ត្រី)
- ល្បាត និងការអន្តរាគមន៍
- ការអនុញ្ញាតលើការប្រើប្រាស់ដីចំណីផ្លូវ

វិធីសាស្ត្ររឹងសម្រាប់ការពារការរំលោភដីចំណីផ្លូវខុសច្បាប់

- បង្ការដីចំណីផ្លូវ
- របងសម្រាប់ការពារការរំលោភដីចំណីផ្លូវ
- បង្ការលស្លាកសញ្ញាដីចំណីផ្លូវ
- បន្ទះដែកសំគាល់ដីចំណីផ្លូវ
- របងសម្រាប់ការពារការឆ្លងកាត់ផ្លូវ (របងថ្មើរដើម)
- ការដាំដើមឈើសម្រាប់ព្រំដីចំណីផ្លូវ

4

ផែនទី ទីតាំងតំបន់គោលដៅ

តំបន់គោលដៅស្ថិតនៅក្នុង**ឃុំជ្រៃបាក់** ភាគខាងត្បូងនៃក្រុងកំពង់ឆ្នាំង



ឃុំជ្រៃបាក់

8

ផែនការទូទៅសម្រាប់តំបន់គោលដៅ A និង B

តំបន់ A និង B នឹងត្រូវបានអនុវត្តនូវចំណុចដូចខាងក្រោម៖

តំបន់ A

តំបន់ B

ទៅស្រុកលាបៀរ

តំបន់ A

- បង្គោលដីចំណីផ្លូវ
- របងការពារការរំលោភដីចំណីផ្លូវ
- បង្គោលស្លាកសញ្ញាដីចំណីផ្លូវ
- ការដាំដើមឈើសំគាល់ព្រំដីចំណីផ្លូវ

តំបន់ B

- បង្គោលដីចំណីផ្លូវ
- បន្ទះដែកសំគាល់ដីចំណីផ្លូវ
- របងសម្រាប់ការពារការឆ្លងកាត់ផ្លូវ (របងថ្មើរជើង)
- បង្គោលស្លាកសញ្ញាដីចំណីផ្លូវ

តំបន់គោលដៅ A

រូបភាព ៣៖ ជីដំនូរ ឬ តំបន់ស្មៅ

រូបភាពគីយភាព

តំបន់ A

ផ្ទាំងឱ្យយកណែនាំក្នុងកម្រិតដំបូង

បង្គោលដីចំណីផ្លូវ

ក្រុងសម្បូរយកណែនាំក្នុងកម្រិតដំបូង

13

ប្រភេទការងារសម្រាប់តំបន់គោលដៅ A

- របងការពារការរំលោភដីចំណីផ្លូវ
- ការដាំដើមឈើសំគាល់ព្រំដីចំណីផ្លូវ
- បង្គោលស្លាកសញ្ញាដីចំណីផ្លូវ
- សំណង់ដែលរំលោភដីចំណីផ្លូវខុសច្បាប់

- តំបន់នេះអាចមាន ដឹកសិកម្មឯកជន របង និងស្លាកសញ្ញា ផ្សាយពាណិជ្ជកម្ម
- របងការពារការ រំលោភដីចំណីផ្លូវ និង ការដាំដើមឈើ សំគាល់ព្រំដីចំណីផ្លូវ និងត្រូវដាំឡើង លើក លែងកែដីដែលជាកម្ម សិទ្ធិឯកជន

10

តំបន់គោលដៅ A

រូបភាព ៤៖ សំណង់ថ្មីដែលបំបែកនៃដីចំណីផ្លូវ

រូបភាពគីយភាព

តំបន់ A

សំណង់ថ្មីដែលបំបែកនៃដីចំណីផ្លូវ

14

តំបន់គោលដៅ A

រូបភាព ១៖ ផ្លូវជាតិលេខ ៥

រូបភាពគីយភាព

តំបន់ A

11

របងសម្រាប់ការពារការរំលោភដីចំណីផ្លូវ

ប្រវែង១០ម៉ែត្រ

ចម្លោះ ៥ម៉ែត្រ

15

តំបន់គោលដៅ A

រូបភាព ២៖ ជីដំនូរ ឬ តំបន់ស្មៅ

រូបភាពគីយភាព

តំបន់ A

12

តំបន់គោលដៅ B

- របងសម្រាប់ការពារការឆ្លងកាត់ផ្លូវ (របងថ្មើរជើង)
- សំណង់រំលោភដីចំណីផ្លូវខុសច្បាប់
- ចិញ្ចឹមផ្លូវ (ក្រាលកង្ការក្នុង ឬ ប្រឡូក)
- បង្គោលស្លាកសញ្ញាដីចំណីផ្លូវ
- បន្ទះដែកសំគាល់ដីចំណីផ្លូវ

សាលាបឋមសិក្សា

របងសម្រាប់ថ្មើរជើង និងចិញ្ចឹមផ្លូវក្រាល និងចិញ្ចឹមផ្លូវក្រាល កង្ការក្នុង ឬ ប្រឡូក

ចិញ្ចឹមផ្លូវ និង កង្ការក្នុង ឬ ប្រឡូក (១០០ម៉ែត្រ)

16

តំបន់គោលដៅ B
រូបភាព ១: ខាងមុខសាលាបឋមសិក្សា (ខាងឆ្វេងដៃ)



ទិញដីមធ្យមវ័យមានស្រាប់

17

តំបន់គោលដៅ B
រូបភាព ៤: ខាងមុខសាលាបឋមសិក្សា (ខាងស្តាំដៃ)



21

តំបន់គោលដៅ B
រូបភាព ២: ខាងមុខសាលាបឋមសិក្សា (ខាងឆ្វេងដៃ)



18

៣. កាលវិភាគការងារ

22

តំបន់គោលដៅ B
រូបភាព ៣: ខាងមុខសាលាបឋមសិក្សា (ខាងឆ្វេងដៃ)



ប្រឡាយ

19

កាលវិភាគការងារ
សម្រាប់វិធីសាស្ត្រការពារការឧប្រតិបត្តិការស្រាវជ្រាវ

- ❖ កាលវិភាគការងារសម្រាប់វិធីសាស្ត្រទំនុកតម្រោងសាកល្បងមានដូចជា៖
- កិច្ចប្រជុំពិគ្រោះយោបល់ជាសាធារណៈជាមួយប្រជាពលរដ្ឋ (ឃុំជ្រៃបាក់) រៀបចំនៅថ្ងៃទី២០ ខែមេសា ឆ្នាំ២០១៩
- កិច្ចប្រជុំពិគ្រោះយោបល់ជាសាធារណៈជាមួយសិស្សានុសិស្សវិទ្យាល័យ (ហ៊ុន សែនរលាវៀរ) រៀបចំនៅថ្ងៃទី២៤ ខែមេសា ឆ្នាំ២០១៩
- ❖ សម្រាប់វិធីសាស្ត្ររឹងការពារការរំលោភដីចំណីរដ្ឋឧសធុរក្នុងគម្រោងសាកល្បង នឹងចាប់ផ្តើមការសាងសង់បន្ទាប់ពីពិធីបុណ្យចូលឆ្នាំប្រពៃណីខ្មែររួច

23



សំណួរ ៣ ក្នុងពេលសង់

១. ក្នុងពេលសាងសង់ នឹងមានសម្លេងរំខាន និងផ្លូវដីដូចនេះសង្ឃឹមថា ម៉ឺង បង ប្អូន មេត្តាបោកយកយល់
២. សំខាន់ជាងនេះ សូមពន្យល់ និងហាមកុំឱ្យក្មេងតូចៗទៅនៅជិត ឬទៅលេងនៅកន្លែងសាងសង់

24

សូមអរគុណសម្រាប់ការយកចិត្តទុកដាក់
ស្តាប់!!



ក្រសួងសាធារណការនិងដឹកជញ្ជូន
មន្ទីរសាធារណការនិងដឹកជញ្ជូន ខេត្តកំពង់ឆ្នាំង

**បទបញ្ជាស្តីពីការគ្រប់គ្រងដីបំណីផ្លូវ
របស់មន្ទីរសាធារណការនិងដឹកជញ្ជូនខេត្តកំពង់ឆ្នាំង**

បទបញ្ជាស្តីពីការគ្រប់គ្រងដីបំណីផ្លូវ លេខ អៀង ឡើយ ប្រទានការិយាល័យសាធារណការ

1

មាតិកា

- > ច្បាប់ផ្លូវថ្នល់និងអនុក្រឹត្យផ្សេងៗ
- > សកម្មភាពការផ្សព្វផ្សាយច្បាប់ផ្លូវថ្នល់
- > សកម្មភាពចុះអនុវត្តការគ្រប់គ្រងដីបំណីផ្លូវ

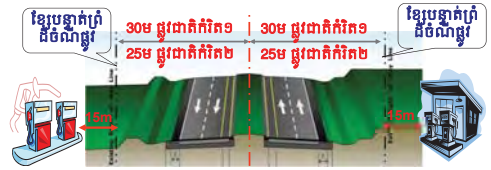
2

ច្បាប់ផ្លូវថ្នល់និងអនុក្រឹត្យផ្សេងៗ

មាត្រា ៣០.-

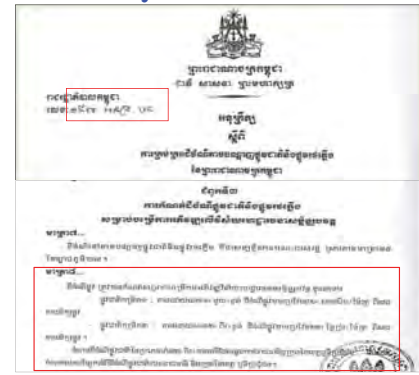
ដើម្បីធានាដល់ការធ្វើការណ៍លើផ្លូវល្បឿនលឿន ផ្លូវជាតិ ផ្លូវខេត្ត ប្រកបដោយសុវត្ថិភាព កាលកាលសាងសង់សំណង់ដែលមានច្រកផ្លូវចេញចូលជាប់នឹងផ្លូវថ្នល់ខាងលើនេះ ត្រូវអនុវត្តដូចខាងក្រោម ៖

- ១- កាលសាងសង់សំណង់ដូចជា ស្ថានីយប្រេងឥន្ធនៈ ស្ថានីយហ្គាស កន្លែងលាងយានយន្ត យានដ្ឋាន ឬសំណង់ប្រហាក់ប្រហែលផ្សេងៗទៀត ដែលមានមនុស្សជួបជុំគ្នាមធ្យមត្រូវស្ថិតក្នុងចម្ងាយយ៉ាងតិច ១៥ (ដប់ប្រាំ) ម៉ែត្រ ពីខ្សែបន្ទាត់ព្រំដីបំណីផ្លូវ ។



10

ច្បាប់ផ្លូវថ្នល់និងអនុក្រឹត្យផ្សេងៗ



10

ច្បាប់ផ្លូវថ្នល់និងអនុក្រឹត្យផ្សេងៗ



10

ច្បាប់ផ្លូវថ្នល់និងអនុក្រឹត្យផ្សេងៗ



10

ច្បាប់ផ្លូវថ្នល់និងអនុក្រឹត្យផ្សេងៗ



4

ច្បាប់ផ្លូវថ្នល់និងអនុក្រឹត្យផ្សេងៗ

- ៤- ការពង្រឹងការគ្រប់គ្រងនិងការប្រើប្រាស់ដីបំណីផ្លូវ៖ ដើម្បីគ្រប់គ្រង ការពារ និងបង្ការដីបំណីផ្លូវឱ្យបាន រឹងមាំ ត្រូវដាក់ការប្រើប្រាស់ដីបំណីផ្លូវឱ្យបានត្រឹមត្រូវ ត្រូវតាមច្បាប់ផ្លូវថ្នល់ អនុក្រឹត្យ បទបញ្ជា និង លិខិតបទដ្ឋានគតិយុត្តនិយមនៃ មន្ទីរក្រសួងសាធារណការនិងដឹកជញ្ជូន ក្នុងការអនុវត្តការងារនេះ។
- ៥- សមត្ថកិច្ចនីតិបញ្ជាក់កិច្ចការនិងការពាក់ព័ន្ធជាមួយនឹងការងារនេះ ត្រូវតាមច្បាប់ផ្លូវថ្នល់ និងលិខិតបទដ្ឋាន គតិយុត្តនិយមនៃ មន្ទីរក្រសួងសាធារណការនិងដឹកជញ្ជូន ក្នុងការអនុវត្តការងារនេះ។
- ៦- កាលសាងសង់សំណង់ដូចជា ស្ថានីយប្រេងឥន្ធនៈ ស្ថានីយហ្គាស កន្លែងលាងយានយន្ត យានដ្ឋាន ឬសំណង់ប្រហាក់ប្រហែលផ្សេងៗទៀត ដែលមានមនុស្សជួបជុំគ្នាមធ្យមត្រូវស្ថិតក្នុងចម្ងាយយ៉ាង តិច ១៥ (ដប់ប្រាំ) ម៉ែត្រ ពីខ្សែបន្ទាត់ព្រំដីបំណីផ្លូវ។
- ៧- កាលសាងសង់ផ្លូវមធ្យមស្ថានភាពជាដើម ឬស្ថានីយប្រេងឥន្ធនៈ ឬស្ថានីយហ្គាស ឬយានដ្ឋាន ឬសំណង់ប្រហាក់ប្រហែល ផ្សេងៗទៀត ត្រូវស្ថិតក្នុងចម្ងាយយ៉ាងតិច ៥០ (ហាសិប) ម៉ែត្រ ពីខ្សែបន្ទាត់ព្រំដីបំណីផ្លូវ។
- ៨- កង្វះកម្លាំងនិងបុគ្គលិកគ្រប់គ្រងដីបំណីផ្លូវ៖ កង្វះកម្លាំងនិងបុគ្គលិកគ្រប់គ្រងដីបំណីផ្លូវ គួបទាំងអស់ ត្រូវប្រើប្រាស់ដីបំណីផ្លូវឱ្យបាន ត្រឹមត្រូវ និងបង្ការដីបំណីផ្លូវឱ្យបានរឹងមាំ ត្រូវតាមច្បាប់ផ្លូវថ្នល់ អនុក្រឹត្យ បទបញ្ជា និង លិខិតបទដ្ឋាន គតិយុត្តនិយមនៃ មន្ទីរក្រសួងសាធារណការនិងដឹកជញ្ជូន ក្នុងការអនុវត្តការងារនេះ។
- ៩- កង្វះកម្លាំងនិងបុគ្គលិកគ្រប់គ្រងដីបំណីផ្លូវ៖ កង្វះកម្លាំងនិងបុគ្គលិកគ្រប់គ្រងដីបំណីផ្លូវ គួបទាំងអស់ ត្រូវប្រើប្រាស់ដីបំណីផ្លូវឱ្យបាន ត្រឹមត្រូវ និងបង្ការដីបំណីផ្លូវឱ្យបានរឹងមាំ ត្រូវតាមច្បាប់ផ្លូវថ្នល់ អនុក្រឹត្យ បទបញ្ជា និង លិខិតបទដ្ឋាន គតិយុត្តនិយមនៃ មន្ទីរក្រសួងសាធារណការនិងដឹកជញ្ជូន ក្នុងការអនុវត្តការងារនេះ។

7

សកម្មភាពអនុវត្តការគ្រប់គ្រងដីចំណីដ្ឋាន

សកម្មភាពចុះពិនិត្យការរំលោភដីចំណីដ្ឋាន នៅ ឃុំរំប្របាក់ ស្រុកលេច្លើន ឆ្នាំ២០១៥



17

សកម្មភាពអនុវត្តការគ្រប់គ្រងដីចំណីដ្ឋាន

សកម្មភាពចុះពិនិត្យការរំលោភដីចំណីដ្ឋាន នៅ ស្រុកទឹកផុស ឆ្នាំ២០១៨



18

សកម្មភាពអនុវត្តការគ្រប់គ្រងដីចំណីដ្ឋាន

សកម្មភាពចុះពិនិត្យការរំលោភដីចំណីដ្ឋាន នៅ ឃុំរំប្របាក់ ស្រុកលេច្លើន ឆ្នាំ២០១៨



19

ស្វាគមន៍កុំភ្លេច!

THANK FOR YOUR ATTENTION !

20



4/18/2019

1

ដូចម្តេចដែលហៅថា ដីចំណីផ្លូវថ្នល់និងការធ្វើប្រែប្រួលដីចំណីផ្លូវថ្នល់?

1. ដីចំណីផ្លូវថ្នល់

សំដៅដល់ដីនៅសងខាងខ្សែបន្ទាត់ផ្តិតនៃផ្លូវថ្នល់ ព្រមទាំងទំហំ ចំណីផ្លូវថ្នល់ទុកបំរុងសម្រាប់ការគ្រប់គ្រង ការអភិវឌ្ឍន៍ និងការ ការពារផ្លូវថ្នល់ ធានាសុវត្ថិភាពចរាចរណ៍ និងសម្រាប់ការប្រើប្រាស់ បំរើឱ្យការងារហេដ្ឋារចនាសម្ព័ន្ធរូបវន្តផ្សេងៗទៀត ដែលបានកំណត់ ដោយខ្សែបន្ទាត់ព្រំដីចំណីផ្លូវ។

4/18/2019

2

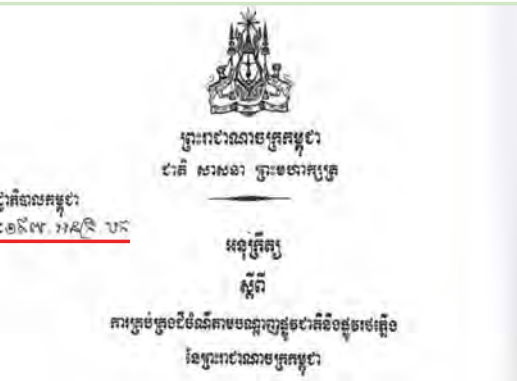
ដូចម្តេចដែលហៅថា ដីចំណីផ្លូវថ្នល់និងការធ្វើប្រែប្រួលដីចំណីផ្លូវថ្នល់(២)

2. ដីចំណីផ្លូវថ្នល់ គឺជាដីរបស់រដ្ឋ ដែលគ្រប់គ្រងដោយសមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ មានដូចជា៖

- ❑ ក្រសួងសាធារណៈ និងដឹកជញ្ជូន៖ គ្រប់គ្រងលើផ្លូវល្បឿនលឿន, ផ្លូវជាតិ ផ្លូវខេត្ត និងផ្លូវផ្សេងទៀតដែលរាជរដ្ឋាភិបាលប្រគល់ឱ្យ
- ❑ ក្រសួងអភិវឌ្ឍន៍ជនបទ៖ គ្រប់គ្រងលើផ្លូវជនបទ និងផ្លូវផ្សេងទៀតដែលរាជរដ្ឋាភិបាលប្រគល់ឱ្យ
- ❑ រដ្ឋបាលថ្នាក់ក្រោមជាតិ៖ គ្រប់គ្រងលើផ្លូវក្រុងរាជធានី, ផ្លូវក្រុង, ផ្លូវទីប្រជុំជននានា ដែលបានកសាងដួសផុលថែទាំដោយប្រើប្រាស់ថវិការបស់រដ្ឋបាលថ្នាក់ក្រោម ជាតិ និងថវិកាដែលបានរៀបចំចាត់ចែងដោយរដ្ឋបាលថ្នាក់ក្រោមជាតិ និងផ្លូវ ទាំងឡាយណាដែលបានផ្ទេរមុខងារពីក្រសួងទាំងពីរខាងលើ ព្រមទាំងផ្លូវផ្សេង ទៀតក្រោយពីមានការសម្រេចឯកភាពពីរាជរដ្ឋាភិបាលប្រគល់ឱ្យ

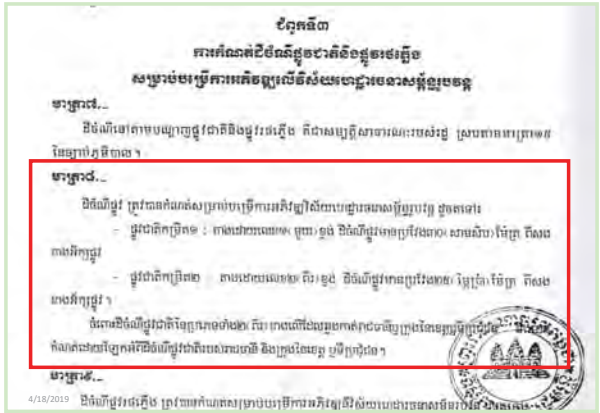
4/18/2019

3



4/18/2019

4



4/18/2019

5

- ខ្សែបន្ទាត់ព្រំដីចំណីផ្លូវថ្នល់ សំដៅដល់ខ្សែបន្ទាត់បណ្តាច់ណាចក្រដីចំណីផ្លូវ ដែលមាន ចម្ងាយកំណត់ពីខ្សែបន្ទាត់ផ្តិតនៃផ្លូវថ្នល់។



4/18/2019

6

- ខ្សែបន្ទាត់ព្រំដីចំណីផ្លូវថ្នល់ សំដៅដល់ខ្សែបន្ទាត់បណ្តាច់ណាចក្រដីចំណីផ្លូវ ដែលមាន ចម្ងាយកំណត់ពីខ្សែបន្ទាត់ផ្តិតនៃផ្លូវថ្នល់។



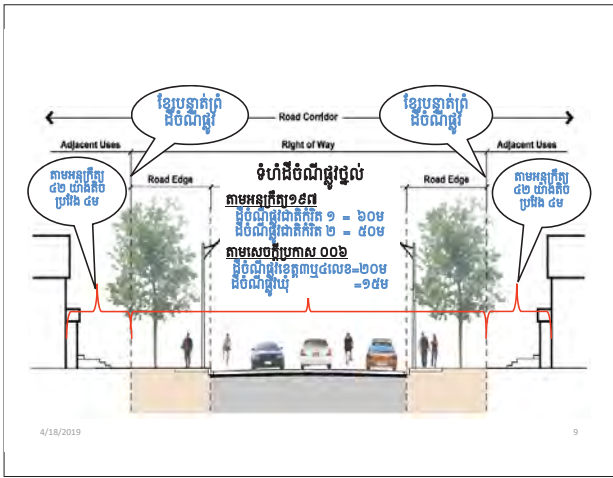
4/18/2019

7



4/18/2019

8



4/18/2019

9

3. ការប្រើប្រាស់ដីចំណីផ្លូវថ្នល់

- រាល់ការសាងសង់លើដីសម្រាប់អភិវឌ្ឍន៍ហេដ្ឋារចនាសម្ព័ន្ធផ្លូវថ្នល់ ជាពិសេសលើដីចំណីផ្លូវជាលក្ខណៈអចិន្ត្រៃយ៍ត្រូវបានហាមឃាត់។ លើកលែងតែការសាងសង់ក្នុងគម្រោងចាំបាច់មួយចំនួនដូចជាបរិក្ខារបម្រើឱ្យវិស័យការពារជាតិ សន្តិសុខជាតិ បរិក្ខារបម្រើឱ្យការគ្រប់គ្រង ឬការសាងសង់ផ្លូវថ្នល់បរិក្ខារសំណង់សេវាសាធារណៈ ផ្សេងៗទៀត ដោយត្រូវស្នើសុំការឯកភាពជាគោលការណ៍ពីក្រសួងសេវាសាធារណៈ ដោយមិនត្រូវធ្វើឱ្យប៉ះពាល់ដល់បរិក្ខារសំណង់សម្រាប់សុវត្ថិភាពបច្ចេកទេសឡើយ។

(តាមមាត្រា១២ នៃច្បាប់ស្តីពី ផ្លូវថ្នល់)

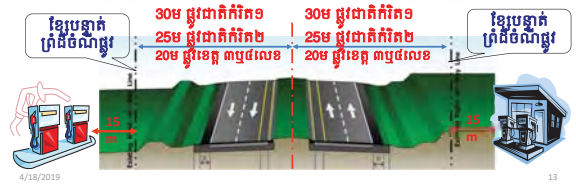
4/18/2019

10

មាត្រា៣០ នៃច្បាប់ស្តីពីផ្លូវថ្នល់

ដើម្បីធានាដល់ការធ្វើចរាចរណ៍លើផ្លូវល្បឿនលឿន ផ្លូវជាតិ ផ្លូវខេត្ត ប្រកបដោយសុវត្ថិភាព រាល់ការសាងសង់សំណង់ដែលមានច្រកផ្លូវចេញចូលជាប់នឹងផ្លូវថ្នល់ខាងលើនេះ ត្រូវអនុវត្តដូចខាងក្រោម ៖

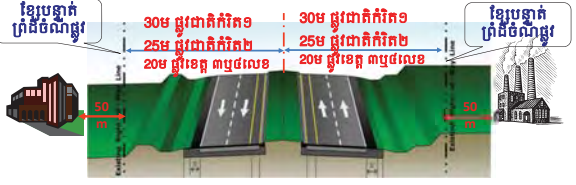
- ១- ការសាងសង់សំណង់ដូចជា ស្ថានីយប្រេងឥន្ធនៈ ស្ថានីយហ្គាស កន្លែងលាងយានយន្ត យានដ្ឋាន ឬសំណង់ប្រហាក់ប្រហែលផ្សេងៗទៀត ដែលមានមនុស្សជួបជុំគ្នាមធ្យមត្រូវស្ថិតក្នុងចម្ងាយយ៉ាងតិច ១៥(ដប់ប្រាំ)ម៉ែត្រ ពីខ្សែបន្ទាត់ព្រំដីចំណីផ្លូវ ។



4/18/2019

13

- ២- ការសាងសង់មជ្ឈមណ្ឌលពាណិជ្ជកម្ម ពហុកីឡដ្ឋាន ទីលានប្រកួត រោងមហាស្រលាត និងរោងចេញ គ្រឹះស្ថានសិក្សា ការរៀបចំផ្សារ ផ្សារណាត់ ពិសេសទំនិញ ឬកិច្ចការផ្សេងៗទៀតដែលមានមនុស្សជួបជុំគ្នាច្រើន ត្រូវស្ថិតក្នុងចម្ងាយយ៉ាងតិចចំនួន៥០(ហាសិប)ម៉ែត្រ ពីខ្សែបន្ទាត់ព្រំដីចំណីផ្លូវថ្នល់ ។



4/18/2019

14

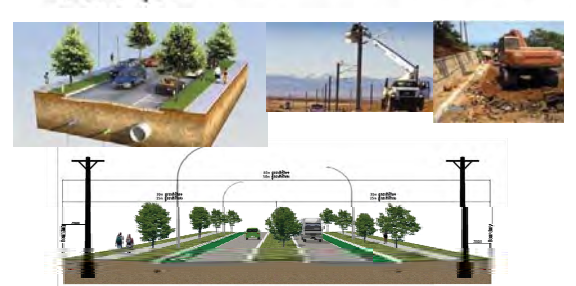
ដូចម្តេចដឹងលំដាប់ដីចំណីផ្លូវថ្នល់?

- ចិញ្ចឹមផ្លូវ សំដៅដល់ផ្នែកសងខាងនៃទ្រូងផ្លូវក្នុងទីប្រជុំជន ដែលរៀបចំទុកសម្រាប់ធ្វើដីដំណើរ ដាំដើមឈើ និងទម្ងន់ប្រកបបរិក្ខារបម្រើផលប្រយោជន៍សាធារណៈ។
- ចិញ្ចឹមផ្លូវប្រវែងដើម ត្រូវប្រើប្រាស់សម្រាប់តែគោលបំណងក្នុងការធ្វើចរាចរណ៍ដោយចិញ្ចឹមដី។
- ចិញ្ចឹមផ្លូវប្រវែងដើម អាចយកទៅប្រើប្រាស់សម្រាប់គោលបំណងផ្សេងទៀតបានស្របទៅតាមបញ្ញត្តិនៃមាត្រា២៨នៃច្បាប់ផ្លូវថ្នល់។
- មិនត្រូវអនុវត្តសកម្មភាពដូចខាងក្រោម៖
 - ចតរថយន្តឬយានជំនិះមិនត្រូវតាមដងផ្លូវ ចិញ្ចឹមផ្លូវ និងផ្លូវសម្រាប់ធ្វើដីទុសពិទីតាំងកំណត់។
 - សាងសង់បារកាត់ទទឹងផ្លូវ ឬទូលបន្ទាយល្បឿន ឬវត្ថុប្រហាក់ប្រហែលលើផ្លូវថ្នល់ដោយគ្មានការអនុញ្ញាត។
 - ធ្វើសកម្មភាពផ្សេងទៀតផ្ទុយនឹងច្បាប់ផ្លូវថ្នល់។

4/18/2019

11

អ្នកធ្វើកិច្ចការសាធារណៈដូចជា ការដោះស្រាយផ្លូវ ការដាក់លូ ឬកិច្ចការចាំបាច់ដ៏មួយបន្ថែមក្នុង គ្រឿងផ្លូវ ថ្នល់ ត្រូវតែ ត្រូវបាន ធ្វើនៅលើដីចំណីផ្លូវ ត្រូវស្នើសុំការអនុញ្ញាតពីសមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ ។



4/18/2019

15

សំណង់ក្នុងដីចំណីផ្លូវ (កែលម្អទិសដៅដីចំណីផ្លូវ)



12

មាត្រា៣២ នៃច្បាប់ស្តីពីផ្លូវថ្នល់

ការដឹកកប់ ការដឹកគាស់ ការចោះខ្ទង់ ឬសកម្មភាពផ្សេងៗទៀតសម្រាប់បម្រើការងារអដឹកកប់ ដែលអាចបង្កឱ្យខូចខាតនិងប៉ះពាល់គុណភាពផ្លូវថ្នល់ ដោយ ប្រើប្រាស់ ដីចំណីផ្លូវ និងការដាំឱ្យខូចផ្លូវ ផ្សារពាណិជ្ជកម្ម ឬការលើកតាំងបង្ហាញប្រដាប់ផ្សេងៗ នៅតាមដងផ្លូវថ្នល់ ឬដីចំណីផ្លូវ ត្រូវមានការអនុញ្ញាតជាលាយលក្ខណ៍អក្សរពីសមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ ។ អ្នកអនុវត្តការងារ ត្រូវចាត់វិធានការសណ្តាប់ធ្នាប់ សម្រួលចរាចរណ៍ ការពារនិងឧបទ្វេហេតុផ្សេងៗដែលកើតមានឡើងដោយចៃដន្យ ការពារលើស្ថានភាពផ្លូវថ្នល់ និងត្រូវតាមដានការណែនាំរបស់សមត្ថកិច្ចជំនាញ ។ អ្នកអនុវត្តការងារដូចមានចែងក្នុងកថាខណ្ឌខាងលើ បន្ទាប់ពីបញ្ចប់ការងាររបស់ខ្លួន ត្រូវធានាប្រតិភូភាពផ្លូវថ្នល់ឱ្យមានស្ថានភាពដូចដើមវិញ ។

4/18/2019

16

មាត្រា ៣៦ នៃច្បាប់ស្តីពីផ្លូវថ្នល់

បុគ្គលដែលមានបំណងចាក់ដី ឬធ្វើអ្វីមួយលើដីចំណីផ្លូវ សម្រាប់ធ្វើផ្លូវចេញចូលគេហដ្ឋាន ក្រុមហ៊ុន រោងចក្រ សហគ្រាស ឬគំនូងផ្សេងៗជាប់ផ្លូវថ្នល់ ត្រូវដាក់ពាក្យស្នើសុំការអនុញ្ញាតជាលាយលក្ខណ៍អក្សរទៅសមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ ឬអ្នកគ្រប់គ្រងផ្លូវថ្នល់ ហើយអាចអនុវត្តការងាររបស់ខ្លួនបានក្រោយពេលទទួលបានលិខិតអនុញ្ញាតជាផ្លូវការ និងត្រូវគោរពតាមការណែនាំរបស់សមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ ។

បែបបទនិងនីតិវិធីនៃការស្នើសុំការអនុញ្ញាត ត្រូវកំណត់ដោយប្រកាសអន្តរក្រសួងរវាងរដ្ឋមន្ត្រីក្រសួងហេដ្ឋារចនាសម្ព័ន្ធ និងដឹកជញ្ជូន និងរដ្ឋមន្ត្រីក្រសួងអភិវឌ្ឍន៍ជនបទ ។

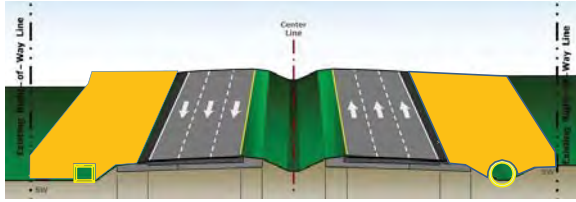


4/18/2019

17



4/18/2019



គោលការណ៍នៃការចាក់ដីនៅសងខាងផ្លូវ

4/18/2019

18

**ចូលរួមគោរពច្បាប់ផ្លូវថ្នល់ និងអនុវត្តច្បាប់គ្រប់គ្រងដីចំណីផ្លូវ
តើដើម្បីជៀសវាងការខាតបង់របស់យើងទាំងអស់គ្នា**
[ទន្ទឹមទន្ទាត់=ជំនាតិ]



4/18/2019

19



4/18/2019

20

(ការវាយតម្លៃសិក្ខាសាលា)

មតិយោបល់របស់អ្នកមានសារសំខាន់ក្នុងការធ្វើឲ្យប្រសើរឡើងការរៀបចំសិក្ខាសាលាលើកក្រោយ។ សូមមេត្តាចំណាយពេល២ទៅ៣នាទីក្នុងការផ្តល់មតិយោបល់ដល់ក្រុមការងាររៀបចំ។

1. បទបង្ហាញទី១: ច្បាប់ បទបញ្ញត្តិ មុខងារ និងការប្រើប្រាស់ដីចំណីផ្លូវ

1.1 តើប្រធានបទស្តីពីដីចំណីផ្លូវ គួរឲ្យចាប់អារម្មណ៍ឬទេ?

មិនចាប់អារម្មណ៍	មិនដឹង	ចាប់អារម្មណ៍ខ្លះ	ចាប់អារម្មណ៍ខ្លាំង
-----------------	--------	------------------	--------------------

1.2 ក្រោយពីបានស្តាប់បទបង្ហាញ និងកិច្ចពិភាក្សា តើអ្នកយល់ដឹងពីដីចំណីផ្លូវកម្រិតណាដែរ?

អត់យល់	យល់មិនច្បាស់	យល់ខ្លះ	យល់ច្បាស់
--------	--------------	---------	-----------

1.3. តើអ្នកនឹងចូលរួមថែរក្សាដីចំណីផ្លូវដោយមិនរំលោភបំពានដីចំណីផ្លូវដែរឬទេ?

មិនចូលរួម	មិនដឹង	ចូលរួម
-----------	--------	--------

ហេតុអ្វី

2. បទបង្ហាញទី២: ការពន្យល់ពីសកម្មភាពរបស់អាជ្ញាធរមូលដ្ឋានក្នុងការគ្រប់គ្រងដីចំណីផ្លូវ

2.1 តើប្រធានបទស្តីពីសកម្មភាពរបស់អាជ្ញាធរមូលដ្ឋានក្នុងការគ្រប់គ្រងដីចំណីផ្លូវ គួរឲ្យចាប់អារម្មណ៍ដែរឬទេ?

មិនចាប់អារម្មណ៍	មិនដឹង	ចាប់អារម្មណ៍ខ្លះ	ចាប់អារម្មណ៍ខ្លាំង
-----------------	--------	------------------	--------------------

2.2 ក្រោយពីបានស្តាប់បទបង្ហាញ និងកិច្ចពិភាក្សា តើអ្នកយល់ដឹងពីសកម្មភាពក្នុងការគ្រប់គ្រងដីចំណីផ្លូវបានកម្រិតណាដែរ?

អត់យល់	យល់មិនច្បាស់	យល់ខ្លះ	យល់ច្បាស់
--------	--------------	---------	-----------

3. បទបង្ហាញទី៣: ការពន្យល់ពីសកម្មភាពការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់

3.1 តើប្រធានបទស្តីពីសកម្មភាពការពារការទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ គួរឲ្យចាប់អារម្មណ៍ដែរឬទេ?

មិនចាប់អារម្មណ៍	មិនដឹង	ចាប់អារម្មណ៍ខ្លះ	ចាប់អារម្មណ៍ខ្លាំង
-----------------	--------	------------------	--------------------

3.2 ក្រោយពីបានស្តាប់បទបង្ហាញ និងកិច្ចពិភាក្សា តើអ្នកយល់ដឹងពីសកម្មភាពការពារការ
ទន្ទ្រានដីចំណីផ្លូវខុសច្បាប់ បានកម្រិតណាដែរ?

អត់យល់	យល់មិនច្បាស់	យល់ខ្លះ	យល់ច្បាស់
--------	--------------	---------	-----------

4. ការរៀបចំសិក្ខាសាលា

4.1 តើសិក្ខាសាលារៀបចំបានល្អទេ?

មិនល្អ	មិនដឹង	ល្អ
--------	--------	-----

3.2 រយៈពេលនៃការរៀបចំសិក្ខាសាលា

ខ្លីពេក	ល្មម	វែងពេក
---------	------	--------

5. ប្រសិនបើមានមតិយោបល់បន្ថែម សូមមេត្តារៀបរាប់ខាងក្រោម

សូមអរគុណ

សូមប្រគល់ក្រដាសនេះទៅឲ្យក្រុមអ្នករៀបចំសិក្ខាសាលានៅពេលបញ្ចប់ ។



Date: 20th April, 2019
Time: 8:00am-10:30am
Location: at Rolar B'ear District Meeting Hall, Kampong Chhnang Province
Topic: Public Consultation Meeting (PCM) on Public Raising Awareness on Right of Way

Attendance List

No	Name	Sex	Position	Institutes	Phone
MPWT					
1	Chea Samnang	M	Chief Office	ROW Management Office, RID, MPWT	
DPWT: Kampong Chhnang Province					
2	Chhay Leaphea	M	Deputy Director	Kampong Chhnang DPWT	
3	Ouk Sophea	M	Deputy Office Chief	DPWT	
4	Lau Brostith	M	Official	DPWT	
5	Mey Channang	M	District Official	DPWT	
6	Ai Arng	M	Technical Official	DPWT	
7	Khut Khemera	M	Technical Official	DPWT	
8	Noeun Sopheap	M	District Official	DPWT	
9	Ros Ratana	M	Chief of Administration Office	DPWT	
10	Nin Nimol	F	Public Works District Official	DPWT	
11	Keo Vit	M	Office Chief	DPWT	
12	Doun Sokly	M	Official	-	
Local Authorities: District Level Officials					
13	Aok Sopheary	F	Deputy District Governor	-	
Local Authorities: Commune Level Officials					
14	Kheum Chham	M	1 st Assistant to Commune Chief	Banteay Preal Commune	
15	Our Srean	M	Community security guard	Commune level	
16	Tun Im	M	Commune Chief	-	
17	Chea Nom	M	Commune Council	Svay Chrum Commune	

1



44	Ei Bunly	M	Vice Village Chief	Tmor Reab Village	
45	Mom Chanmab	M	Village Member	Krang Prosvay Village	
46	Preang Vuthy	M	Vice Village Chief	Ou Sandan Village	
47	Soun Sovan	M	Village Chief	Trapeang On Village	
48	Him Pha	M	Village Chief	Bompong Pnek Village	
49	Chan Kimhak	M	Village Chief	Preah Ream Reangsey Village	
50	Chhim Sarom	F	Vice Village Chief	Chomka Khlei Village	
51	Chea Soksan	M	Vice Village Chief	Thnol Tmey Village	
52	Chim Thol	M	Village Chief	Tuek Ho Village	
53	Sun Sarom	F	Village Chief	Snhet Village	
54	Seng Preil	M	Village Chief	Andoung Keo Village	
55	Kim Sok	M	Village Member	Ah Laeng Village	
56	Chhim Sat	M	Village Chief	-	
57	Sman Pleu	M	Village Focal Person	-	
58	Aai Ong	M	Official	-	
59	Nueb Eang	M	Village Chief	Trouk Lech Village	
60	Nou Chamroeun	M	Village Chief	Thnong Kambot Village	
61	Tob Chhan	M	Village Chief	Trea Thong Village	
62	Baung Thy	M	Village Chief	Prek Rang Village	
63	Om Sophala	M	Village Member	Prey Leak Neang Village	
64	Phuong Phai	M	Village Chief	Ja Tmey Village	
65	Soun Yon	M	Vice Village Chief	Andoung Chros Village	
66	Meas Hong	M	Village Chief	Krous Village	
67	Kong Mithona	M	Village Chief	-	
68	Oun Sophal	M	Vice Village Chief	Ou Roung Village	
69	Vou Sreyroth	F	Village Member	-	
70	Loeung Savorn	M	Village Chief	Toub Srov Village	
71	So Sambath	M	Vice Village	Chanloh Ren Village	

3



18	Mey Channang	M	Commune Official	-	
19	Men Saroeun	M	Commune Council	Rolea Baear Commune	
Local Authorities: Village Level Officials					
20	In Ori	M	Village Chief	Torb Tbaeng Village	
21	Srey Sarun	M	Village Chief	Stok Kabas Village	
22	Oum Sopath	M	Village Chief	Chheur Neak Village	
23	Leng Heng	M	Village Chief	Andong Russei Village	
24	Mout Tam	M	Vice Village Chief	Trapeang Korpeur Village	
25	Som Huy	M	Village Chief	Trapeang Korpeur Village	
26	Thab Tharith	M	Village Chief	Phum Thmey Village	
27	Som Heurn	M	Village Chief	Toul Ksach Village	
28	Sao Yet	M	Vice Village Chief	Prey Pouch Village	
29	Rous Sarat	M	Village Chief	Plov Kor Village	
30	Khoun Sothorn	M	Village Chief	Trapeang Sbov Village	
31	Hun Sat	M	Village Chief	Tro Cherng Village	
32	Pel Sareth	M	Village Chief	Trapeang Anchanh Village	
33	Nheam Savoeun	M	Vice Village Chief	Chen Village	
34	Keo Saroun	F	Village Chief	-	
35	But Chantrea	F	Village Member	Spok Reach Village	
36	Kok Heng	M	Vice Village Chief	Kork Sdav Village	
37	Hornng Chek	M	Vice Village Chief	Knong Village	
38	Ju Pon	M	Village Chief	Trapeang Kor Village	
39	Pot So	M	Village Chief	Trapeang Ompel Village	
40	Mork Them	M	Village Chief	Prey Koh Village	
41	Nerm Sarith	M	Village Chief	Preal Village	
42	Siv Khorn	M	Village Chief	Kdey Tnot Village	
43	Toum Samuen	M	Vice Village Chief	DunTomPor Village	

2



			Chief		
72	Chan Leng	M	-	Tomnob Ti Mouy Village	
73	Thai Samorn	M	Village Chief	Chamkar Tamoa Village	
74	Non Pheb	M	Village Chief	Chea Rov	
75	Rous Mol	F	Village Chief	Trapeang Phdam Village	
76	Ouk Sanith	M	Vice Village Chief	Ou Leach Village	
77	Doung Bunthan	M	Village Chief	Tbeng Village	
78	Chun Bunly	M	Village Chief	Traok Kaet Village	
79	Pov Tharin	M	Village Chief	Prey Morn Village	
80	Teng Sopath	M	Village Member	-	
81	Chhit Vanthon	M	Village Chief	Svay Chrum Tmey Village	
82	Vong Soeun	M	Village Chief	Plov Veay Village	
83	Chum Kungkea	M	Village Chief	Tmey Village	
84	Mey Bai	M	Vice Village Chief	-	
85	Tit Phan	M	Village Chief	Khvit Village	
86	Meas Soeun	M	Village Chief	Phnom Touch Village	
87	Pen Han	M	Village Chief	-	
88	Srong Hin	M	Village Chief	Ou Kandal Village	
89	Chea Song	M	Village Chief	Ou Kamnob Village	
90	Mout Samet	M	Village Chief	-	
91	Khoem Sern	M	Village Chief	Traok Kandal Village	
92	Touch Ka	M	Vice Village Chief	-	
93	Hok Sarun	M	Village Chief	-	
94	Khoun Sokhom	F	-	Tomnob Ti Mouy Andoung Snay Village	
95	Tob Phan	M	Village Chief	Svay Chrum Chas Village	
96	Kong Chandeth	M	-	Ou Sandan Tmey Village	
97	Sok Sambun	M	-	Prek Sala Village	
98	Sok Veasna	F	Vice Village Chief	Tmey Village	

4



99	Kaet Sophat	M	Vice Village Chief	Ou Tanes Village	
100	Tit Chantha	F	Village Chief	Andoung Snay Village	
101	Sok Prin	M	-	Dombok Korkos Village	
102	Khoy Khi	M	-	Tomnob Ti Mouy Brasvib	
Citizen					
103	Rin Sopha	F	Citizen	Stok Kabab Village	
104	Mom Chheurn	M	Citizen	-	
105	Bi Van	M	Citizen	-	
106	Touch Sovan	M	Citizen	-	
107	Mom Chanthol	M	Citizen	Krang Prosvay Village	-
108	Kao Chanmom	F	Citizen	-	-
109	El Kimchhouk	M	Citizen	-	-
110	Sao Chhin	M	Citizen	-	
111	Seng Kimleang	F	Citizen	-	
112	Hour Bunhong	M	Citizen	-	
113	Soung Samna	M	Citizen	-	
114	Keang Sereybot	M	Citizen	-	-
115	Oul Saman	M	Citizen	-	-
116	Phal Sovichea	M	Citizen	-	
JICA Project Team					
117	TSUCHIDA Takayuki	M	Team Leader	CESCO Project	
118	Masaki OCHI	M	Project Member	CESCO Project	
119	Ches Sophy	F	Assistant	CESCO Project	
120	Penh Socheat	M	Assistant	CESCO Project	
121	Bun Sereyvuth	M	Assistant	CESCO Project	

1. 1st Presentation: Law, Regulation, Function and Utilization of Right of Way (ROW)

1.1 Topics were interesting.

1.2 After presentation and discussion, how much do you understand it?

1.3 Are you going to maintain the ROW by not illegally encroaching the ROW?
why?
Reason:

1-No Interest	2-Don't Know	3-Less Interest	4-Much Interest
1-Don't Understand	2-Not Clearly Understand	3-Partially Understand	4-Fully Understand
1-Not Participate	2-Don't Know	3-Participate	

2. 2nd Presentation: Activities of Local Authority on ROW Management

2.1 Topics were interesting.

2.2 After presentation and discussion, how much do you understand it?

1-No Interest	2-Don't Know	3-Less Interest	4-Much Interest
1-Don't Understand	2-Not Clearly Understand	3-Partially Understand	4-Fully Understand

3. 3rd Presentation: Illegal Encroachment Prevention Activities

3.1 Topics were interesting.

1-No Interest	2-Don't Know	3-Less Interest	4-Much Interest

1-Don't Understand	2-Not Clearly Understand	3-Partially Understand	4-Fully Understand

3.2 After presentation and discussion, how much do you understand it?

4. PCM Organization	a-Not Good	b-Don't Know	c-Good
4.1 Seminar was nicely organized.			
4.2 The time for PCM was	a-Too Short	b-Just Right	c-Too Long

5. If you any specific comments, please kindly share with us as below:
Comments

20190420_PCM Residence Evaluation at Kampong Chhnang

No	Q1				Q2		Q3		Q4		Q5
	1.1	1.2	1.3	Reason	2.1	2.2	3.1	3.2	4.1	4.2	
C01	4	4	3	1	4	4	3	3	3	2	1
C02	4	3	3		4	3	4	3	3	2	
C03	4	4	3	1	4	4	4	4		2	
C04	4	3	3	1	4	4	4	4	3	2	
C05	4	4	3	1	4	4	4	4	3	2	
C06	4	4	3		4	4	4	4	3	2	
C07	4	4	3	1	4	4	4	4	3	2	
C08	4	4	3		4	4	4	4	3	2	
C09	4	4	3		4	4	4	4	3	2	
C10	4	4	3	1	4	4	4	4	3	1	1
C11	4	4	3	1	4	4	4	4	3	2	
C12	4	4	3	1	4	4	4	4	3	2	
C13	4	4	3	1	4	4	4	4	3	2	1
C14	3	3	3	1	3	3	4	3	3	2	1
C15	4	4	3	1	4	4	4	4	3	2	1
C16	4	3	3	1	4	3	4	3	3	2	
C17	4	4	3	1	4	4	4	4	3	2	
C18	4	4	3	1	4	4	4	4	3	2	
C19	4	4	3	1	4	4	4	4	3		
C20	4	4	3	1	4	4	4	4	3	2	
C21	4	4	3			4		3			
C22	4	4	3		4	3	4	3	3	2	
C23	4	4	3	1	4	4	4	4	3	2	1
C24	3	3	3		3		4		1	2	
C25	4	3	3		4	3	4	3	3	2	
C26	3	4	3		3	3	4	3	3	3	
C27	3		3			3	3	4	3	2	
C28	4	4	3		3	4	4	4	3		
C29	3	3	3		4	3	4		1	2	
C30	3	3	3		3	4	4	3	3	2	
C31	4	4	3		4	4	4	4	3	2	1
C32	4	3	3	1	4	4	3	4	3	2	1
C33	4	4	3		4	4	4	4			1
C34	4	4	3	1	4	4	4	4	3		1
C35	4	4	3	1	4	4	4	4	3	2	1
C36	4	4	3	1	4	4	4	4	3	2	1
C37	4	3	3	1	4	4	4				
C38		4		1	4	4	4	4	3	2	1
C39	4	4	3	1	4	4	4	4	3	2	1
C40	4	4	3	1	4	4	4	4	3	2	1
C41	4	4	3	1	4	4					
C42		4	3	1	4	4	4	4	3	2	
C43	4	3	3	1	4	3	3	3	3	2	
C44	4	4	3		4	4	4	4	3	2	
C45			3	1	4	4	4	4	3	2	1
C46	3		3	1	4	3	3	4	3	2	
C47	4	3	3	1		4	4		3	2	1
C48	3		3	1	4	3	3	4	3	2	
C49	3		3	1	4	3	3	4	3	2	
C50	4	4	3	1	4	4	4	4	3	2	
C51	4	3	3	1	4	3	4	3	3	2	
C52	4		3	1	4	4	4	3	3	2	
C53	4	4	3	1	4	3	4	4	3	1	1
C54	4	4	3	1	4	4	4	4	3	2	1
C55		4	3	1		3	4	4	3	2	1
C56	4		3	1	4	4	4	4	3	2	1

C57	4	4	3	1	4	4	4	4		2	
C58	4	4	3	1	4	3	4	3	3	2	
C59	4	4	3	1	4	4	4	3	3	2	
C60	4	3	3	1	4	4	4	4	3	2	
C61	4	4	3	1	4	4	4	4	3	2	
C62		4	3	1	4	4	4	3			
C63	4	4	3		4	4	4	3	3	2	
C64	4	4	3	1	4	4	4		3		
C65	4	4	3	1	4	4	4	4	3	2	1
C66	4	4	3	1	4	4	4	4	3	2	1
C67	4	4	3	1	4	4	4	4	3	2	
C68	4	4	3		4	4	4	4	3		
C69	4	4	3		4	4	4	4	3	3	
C70	4		3	1	4	4	4	2	3	2	
C71	4	4	3	1	4	4	4	3	3	2	1
C72	4	4	3	1	4	4	4	4			
C73	4	3	3	1	4	4	4	4	3	2	
C74	4	3	3	1	4	3	4	3	3	2	1
C75	4	4	3	1	4	3	3	4	3	2	1
C76	4	4	3	1	4	4	4				
C77	4	3	3	1	4	3	4	3	3	2	1
C78	4	4	3		4	4	4		3		
C79	4	4	3	1	4	4	4	4	3	2	
C80	4	4	3		4	4	4	4	3	2	
C81	4	4	3	1	4	4	4	4	3	2	
C82	3	3	3	1	3	3	3	4	3	2	
C83	3	3	3		3	3	3	4	3	2	
C84	4	4	3	1	4	4	4	4	3		
C85	4	4	3	1	4	4	4	4	3	2	1
C86	4	4	3	1	4	4	4	4	3		1
C87	4	4	3	1	4	4	4	4	3	2	
C88	4	4	3	1	3	4	4	4	3	2	
C89	4	4	3	1	4	4	4	4	3	2	
C90	4	3	3	1	3	4	4	4	3	2	1
C91	4	3	3		4	3	4	3	3	2	
C92	2	3	3		4	3	4	3	3		
C93	4	4	3	1	4	4	4	4	3	2	1
C94	4	4	3	1	4	4	4	4	3	2	1
C95	4	4	3	1	4	4	4	4	3	2	
C96			3	1		4		4	3	2	1
1	0	0	0	72	0	0	0	0	2	2	33
2	1	0	0		0	0	0	1	0	76	
3	11	22	95		9	23	10	21	85	2	
4	78	65			82	72	83	65			

Summary of PCM Resident Evaluation (Fri: 20th April 2019 at Kempton (O'Hanell))

1. 1st Presentation: Use of Medical Devices and Utilization of Right of Way (ROW)					Total	90
1.1. Topic was interesting.	0	1	11	78		87
1.2. After presentation and discussion, how much do you understand it?	0	0	22	65		87
1.3. Are you going to maintain the ROW by not illegally encroaching the ROW? If Yes, why? Number of Reasons or Comments	72	0	95			72
Percentage	1. No Interest	2. Don't know	3. Less Interest	4. Much Interest		
	0%	1%	12%	87%		
1.2. After presentation and discussion, how much do you understand it?	1. Don't understand it Clearly	2. Understand Partly	3. Understand Fully	4. Understand Very Well		
	0%	0%	72%	28%		
1.3. Are you going to maintain the ROW by not illegally encroaching the ROW? If Yes, why? Number of Reasons or Comments	1. Not participate	2. Don't know	3. Participate			
	0%	0%	100%			
	Error					

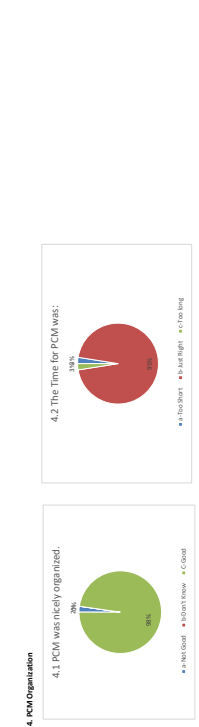
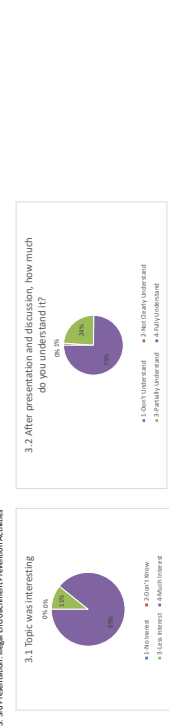
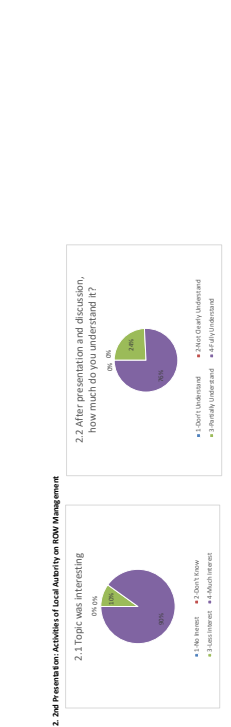
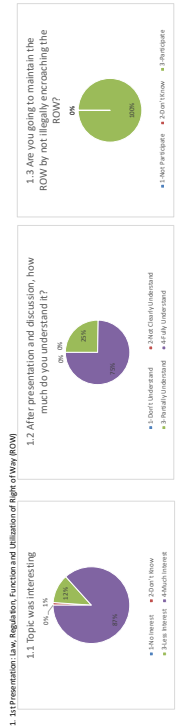
2. 2nd Presentation: Activities of Local Authority on ROW Management					Total	91
2.1. Topic was interesting.	0	0	9	82		91
2.2. After presentation and discussion, how much do you understand it?	0	0	23	72		95
Percentage	1. No Interest	2. Don't know	3. Less Interest	4. Much Interest		
	0%	0%	10%	90%		
2.2. After presentation and discussion, how much do you understand it?	1. Don't understand it Clearly	2. Understand Partly	3. Understand Fully	4. Understand Very Well		
	0%	0%	24%	76%		

3. 3rd Presentation: Legal Encroachment Prevention Activities					Total	93
3.1. Topic was interesting.	0	0	10	83		93
3.2. After presentation and discussion, how much do you understand it?	0	1	21	65		87
Percentage	1. No Interest	2. Don't know	3. Less Interest	4. Much Interest		
	0%	1%	24%	75%		
3.2. After presentation and discussion, how much do you understand it?	1. Don't understand it Clearly	2. Understand Partly	3. Understand Fully	4. Understand Very Well		
	0%	1%	24%	75%		

4. PCM Organization					Total	87
4.1. PCM was nicely organized.	2	0	85			87
4.2. The time for PCM was	76	2				87
Percentage	a. Not Good	b. Don't know	c. Good			
	2%	0%	98%			
4.1. PCM was nicely organized.	a. Too Short	b. Just Right	c. Too Long			
	3%	95%	2%			
4.2. The time for PCM was						

5. If you have any specific comments, please notify by how with us at below Number of Comments:

Summary of PCM Residence Evaluation (On 20th April 2019) **Total=96 out of 121** Dhruv Bhat, Kampong Chhnang Province



5. If you have any specific comments, please kindly share with us below:

Summary of 33 Comments:

- Please go to documents the laws to all people living along NR No. 5 in Kampong Chhnang Province (4);
- More people do not listen to the advice from local authorities regarding the usage of ROW. They are illegally construct buildings inside the ROW.
- Most of the summary could help people understand the laws;
- Request to have such kind of this meeting or training;
- Request to WPT to build or clear the land up to ROW boundary for all National Road 1 or 2 or 3. Right;
- How good are the laws for very poor people;
- The PCM on ROW today is very good;
- Wider road and better services to poverty and traffic accident reduction;
- The second presentation from this PCM made the management level, village level and people get the better understanding;
- Want to have better roads than need to attend;
- We will protect the ROW for river, pond, stream, mountain and forest of school and pagoda and public but the other people want to encroach (2);
- We will protect ROW without letting anyone encroaching (2);
- What should we do after the meeting people are the encroaching;
- Request to have Government for building the country their good training, and good view, quality, development. With you all best for this new year;
- After listening to the presentation, I felt relaxed and hope that we can reduce the traffic accidents and have good standard for road expansion;
- Thank you also to DPMVT for good presentation on ROW. I could understand better;
- Thanks local authorities for building roads for rural roads but not other roads;
- Thank for explanation the PCM to discuss the laws on ROW (2) and
- After listening to the presentation, I could understand better and am willing to have this to other people.

Summary of 77 Comments: http://www.doh.gov.kh/Ministry/Ministry%20of%20Road%20Transportation

- We understand about illegal encroachment (2);
- Illegal encroachment;
- ROW belongs to state and managed by WPTV. Ministry of Rural Development and sub-national for the future development (2);
- Maintain and protect ROW for future development and protect road to avoid traffic accident (8);
- Law should be promoted from primary levels to commune and village level;
- Our community will support the ROW activities (2);
- The topic about ROW is very interesting for local authorities and sub-national such as district, commune and village to take action to prevent illegal encroachment;
- Should disseminate to all citizens to have better understanding on ROW and protect ROW together;
- Can the knowledge and will share to other people;
- I want to participate to protect ROW and road in the sake of everyone's benefit;
- Because I understood that ROW is important and useful for everyone and commune and village development for country development (8);
- ROW is the state's property and kept for road expansion and growing tree for protect safe;
- I would like to thank PCA team and WPTV team for this dissemination work;
- Please build the road after the announcement so you there is no city construction (only the dirt) and
- Because roads national economy that we cannot lack of.



PCM with Residence Memo at Kampong Chhnang Province

Date & Time :	20 th April 2019 from 8:00am to 10:30am
Place	Rolear B'ear District Meeting Hall, Kampong Chhnang Province
MPWT Attendees :	Mr. Chea Samnang, Chief of ROW Management Office, RID
DPWT Attendees:	- Mr. Chhay Leaphea, Duputy Director of Kampong Chhnang DPWT; - Mr. Ouk Sophea, Deputy Office Chief; - Mr. Lau Brostith, Official of DPWT; - Mr. Mey Channag, District Official of DPWT; - Mr. Ai Arng, Official of DPWT; - Mr. Kut Khemera, Technical Official of DPWT; - Mr. Noeun Sopheap, District Official of DPWT; - Mr. Ros Ratana, Chief of Administration Office of DPWT; and - Ms. Nin Nimol, District Official of DPWT.
Local Authorities (village and commune Chiefs) and Residence:	- Local Authorities (89 persons) and local citizen (16 persons)
Project Team :	Dr. Tsuchida, Mr. Ochi, Mr. Socheat, Mr. Sereyvuth, Ms. Sophy
Agenda / Discussion Points :	<ul style="list-style-type: none">▪ To disseminate the Laws and legal documents on ROW;▪ To explain the ROW Management Activities by DPWT;▪ To explain the IEP approaches in Pilot Project Area.

Opening Remarks by Mr. Chea Samnang:

- Firstly, on behalf of MPWT, thanks JICA Project Team for supporting this PCM organization;
- MPWT has responsibilities in developing and rehabilitating infrastructures such as road, port, railways and highways in order to ensure the National Development;
- Because all officials of MPWT including DPWTs and sub-national administration, we have got many achievements so far;
- However, there are also the increase of number of vehicles and also the number of illegally encroached building inside of ROW;
- These lead to the loss of national budget and time, road damage and traffic accidents.



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



- Then today we are organizing the Public Consultation Meeting on ROW Management in order to raise awareness to local people to better understand the ROW.

1st Presentation on Law, Regulation, and activities on ROW Management by Mr. Samnang, chief of ROW Office:

- What is ROW and ROW usage base on the Road Law?
- What is Sidewalk and sidewalk usage based on the Road Law?
- Explain the drawing of road cross section to show the ROW boundary and how to install utilities inside the ROW.
- Explain the principal on Land-filling inside the ROW (both sides)

2nd Presentation on ROW Activities Management by Kampong Chhnang DPWT by Mr. Kut Khemera, Official of Technical Office:

- Law on Road and other Sub-decrees;
- Other Activities on Road Law Dissemination; and
- Activities on ROW Management.

3rd Presentation on Overview of IEP Approaches in Pilot Project by Mr. Penh Socheat, JICA Project Team:

- IEP Approaches;
- Target Areas; and
- Schedule

Discussion:

Q1 (Citizen): I have faced problem with the flood at my house due to the overflow of rainfall from road to my house. 2 years ago, there was a pond at the upstream. But it was filled up with the small culvert installed. After that, when there is much rain, that small culvert cannot release the water from the road in time. Therefore, my house is flooded by the rainfall due to lower elevation compared to road elevation and neighboring houses' elevation. I have complained to village chief but no solution. Can you help me for that I have suffered from this situation for 2 years?

A1 (from Mr. Samnang): I understood your problem and situation; however, we are sorry we are organizing the meeting today in order to disseminate the law on ROW management. We are not technical officials. What we can help you as well as our people is to respect and follow the law in order to avoid future misunderstanding and problem. We should listen to our technical officials and follow the design advised by our technical officials.

2

CTI Engineering
International Co., Ltd. (CTII)

Environment and Social Infrastructure
Consultant Co., Ltd. (ESIC)

Hanshin Expressway
Company Limited (HEX)

Joint Venture

Address: JICA Project Office, c/o International Cooperation Department, MPWT, Corner Norodom Blvd,
Street 106, Phnom Penh, Tel: +855-(0)61 960 213



Q2 (Citizen): After receiving the compensation, the building owners should remove their structures within 30days. Then I would like to know how far or what is the new distance we should build new structure or fence from ROW? For example, at one secondary school, one building was destroyed due to the illegal encroachment inside the ROW. So, how many meters from ROW we should build new building or fence?

A2 (from Mr. Samnang): I think this issue is related to National Road No.5 Project; but I can share answer here based on the Law. After receiving the compensation and removing the encroached buildings, you can build new structure anytime but you should make sure that it is not inside the ROW. A bit further from ROW boundary is better for your safety. For the case of secondary school, at least 4m or 5m from ROW boundary to build new fence for students' safety.

Q3 (Citizen): one poor family bought one piece of land for a long time ago (before the road constructed), and now the government needs the land and ask that family to move out of ROW for the road construction by providing compensation and new house at new location. However, the land owner does not agree to those compensation, what should that family do?

A3 (From Mr. Samnang): Actually, the government can use the expropriation law to ask for the land for the national development (road construction or expansion) with the compensation. If the people do not agree, there is a case of negotiation. If the negotiation still does not work, the government will strictly use the law to get the agreement from the owner.

Closing Remarks by Mr. Chea Samnang:

- Thanks to your cooperation, our PCM was successfully completed;
- As informed in the presentation, Chrey Bak Commune has been selected for the implementation of IEP approaches, then we need your cooperation; and
- Chrey Bak commune will become good sample on ROW Management for the country; I hope you will cooperate with us.



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



CTI Engineering
International Co., Ltd. (CTII)

Environment and Social Infrastructure
Consultant Co., Ltd. (ESIC)

Hanshin Expressway
Company Limited (HEX)

Joint Venture

Address: JICA Project Office, c/o International Cooperation Department, MPWT, Corner Norodom Blvd,
Street 106, Phnom Penh, Tel: +855-(0)61 960 213



Memo of PCM with Students at Kampong Chhnang Province

Date & Time :	24 th April 2019 from 9:00am to 10:30am
Place	Bun Rany Hun Sen Rolear B'ear Highschool, Kampong Chhnang Province
MPWT Attendees :	Mr. Chea Samnang, Chief of ROW Management Office, RID
DPWT Attendees:	<ul style="list-style-type: none">- Mr. Ouk Sophea, Deputy Office Chief; DPWT- Mr. Keo Vit, Chief of Office; DPWT- Mr. Eang Huor, Chief of Office; DPWT- Mr. Dun Sokly, Deputy Chief of Office; DPWT- Mr. Sok Chanveasna, Deputy Chief of Office; DPWT- Mr. Lau Brostith, Official; DPWT- Mr. Ai Arng, Official; DPWT- Mr. Kut Khemera, Technical Official; DPWT- Ms. Nin Nimol, District Official; DPWT- Mr. Heang Sophal, Official; DPWT- Mr. Leng Veasna, Official; DPWT- Ms. Trasom Sopheaneath, Official; DPWT- Ms. Keo Monorom, Official; DPWT- Ms. Say Somutha, Official; DPWT
Students and Teachers	<ul style="list-style-type: none">- Students (84 persons), and Teacher (5)- 28 Male, 61 Female
Project Team :	Mr. Akihiro, Ms. Sophy Mr. Socheat, and Mr. Sereyvuth,
Agenda / Discussion Points :	<ul style="list-style-type: none">▪ To disseminate the Laws and legal documents on ROW;

Opening speech

Director of Highschool:

Cambodia is a developing country, so it needs a lot of infrastructure development. Road plays very important role in developing economy of the country. Thus, we need more human resources who has knowledge and skills in road development and management. Encroaching right of way is associated with increasing number of traffic jam and traffic accident. I hope that students and teachers will pay attention on today workshop on right of way and share the knowledge with your communities.



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



Mr. Samnang:

MPWT organized some workshops on Right of Way and traffic safety at national and sub-national levels at some provinces including Kompong Chhnang Province. In addition, through JICA project we have organized some public consultation workshops to promoting understanding of local people and local authorities living along national road. In May 2018, MPWT, Phnom Penh Municipality and JICA project organized public consultation meeting at Chhbar Ampov Khan (district) at National Road 1. Last weekend, we just organized Public Consultation Meeting on Right of Way for residents and local authorities living in Chhrey Bak Commune in Kompong Chhnang Province, there were about 100 participants attending the meeting. Today event aim to promote awareness of high school students and teachers at Bun Rany Hun Sen Rolear Bier high school on right of way with expected number of 100 participants. We expect and hope that after today workshop students and teachers will understand what is right of way, length of right of way for each roads and share knowledge with your family, neighbors and communities.

Presentation:

Presentation on Law, Regulation, and activities on ROW Management by Mr. Samnang,

- What is ROW and ROW usage base on the Road Law?
- What is Sidewalk and sidewalk usage based on the Road Law?
- Explain the drawing of road cross section to show the ROW boundary and how to install utilities inside the ROW.
- Explain the principal on Land-filling inside the ROW (both sides)

Question and Answer:

Teacher (Participant): What are differences between Highway and National Road?

Mr. Samnang (Presenter): Size of highway and national road are the same. The difference between highway and national road is that we don't allow local people living and selling goods along highway and they construct roadside station or resting area for traveler instead.

Mr. Samnang: asked students with three questions as below and he give some small gifts to those who can answer correctly:

1. Why does Japanese road improvement project for national road 5 construct bypass road instead of expanding on existing road in Kompong Chhnang city?
2. Could you please tell me which roads are under management of Ministry of Public Work and Transport?
3. Could you please tell me the length of right of way for each types of roads under management of Ministry of Public Work and Transport.



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



Closing Remarks by Mr. Chea Samnang:

- Expressing thankfulness to Director and Teachers at Bun Rany Hun Sen Rolear B'ear Highschool for their good collaboration, our PCM could not be smoothly completed without this good collaboration;
- Requesting students and teachers to share their knowledge about ROW with their relatives, friends and communities to involving in ROW prevention for future smooth road improvement as well as to ensure traffic safety along the national road.



របៀបវារៈ:

កិច្ចប្រជុំពិគ្រោះយោបល់ជាសាធារណៈ

ស្តីពីការលើកកម្ពស់សមត្ថភាពយល់ដឹងលើការប្រើប្រាស់ដីចំណីផ្លូវដល់សិស្សានុសិស្ស

វិទ្យាល័យ ប៊ុន រ៉ានី ហ៊ុន សែន រលាបៀរ ថ្ងៃពុធ ទី២៤ ខែមេសា ឆ្នាំ២០១៩

ម៉ោង	កម្មវិធី
09:00 – 09:20	ចុះឈ្មោះចូលរួម
09:20 – 09:30	សុន្ទរកថាលើកកម្មវិធី លោក នាយកវិទ្យាល័យ ប៊ុន រ៉ានី ហ៊ុន សែន រលាបៀរ
09:30 – 10:00	ការពន្យល់ពីច្បាប់ បទបញ្ញត្តិ មុខងារ និងការប្រើប្រាស់ដីចំណីផ្លូវ ប្រធានការិយាល័យដីចំណីផ្លូវ ក្រសួងសាធារណការ និងដឹកជញ្ជូន
10:00 - 10:10	សុន្ទរកថាបិទកម្មវិធី មន្ត្រីពីនាយកដ្ឋានហេដ្ឋារចនាសម្ព័ន្ធផ្លូវថ្នល់ ក្រសួងសាធារណការ និងដឹកជញ្ជូន
10:10 - 10:20	វគ្គប្រគល់លិខិតបញ្ជាក់ការចូលរួម
10:20 - 10:30	ថតរូបអនុស្សាវរីយ៍



4/18/2019

1

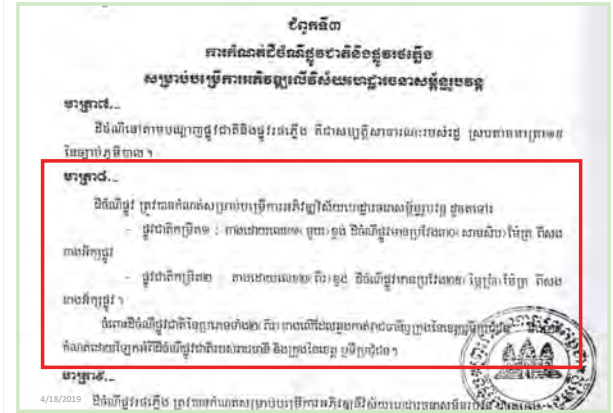
ដូចម្តេចដែលហៅថា ដីចំណីផ្លូវថ្នល់និងការប្រើប្រាស់ដីចំណីផ្លូវថ្នល់?

1. ដីចំណីផ្លូវថ្នល់

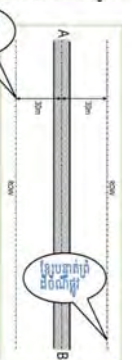
សំដៅដល់ដីនៅសង់ខាងខ្សែបន្ទាត់ផ្លូវថ្នល់ ព្រមទាំងទំហំ ចំណីផ្លូវថ្នល់ទុកបំប៉នសម្រាប់ការគ្រប់គ្រង ការអភិវឌ្ឍន៍ និងការ ការពារផ្លូវថ្នល់ ធានាសុវត្ថិភាពចរាចរណ៍ និងសម្រាប់ការប្រើប្រាស់ បំពេញការងារហេដ្ឋារចនាសម្ព័ន្ធរូបវន្តផ្សេងៗទៀត ដែលបានកំណត់ ដោយខ្សែបន្ទាត់ដីចំណីផ្លូវថ្នល់។

4/18/2019

2



- ខ្សែបន្ទាត់ដីចំណីផ្លូវថ្នល់ សំដៅដល់ខ្សែបន្ទាត់បណ្តាចំណុចត្រូវដីចំណីផ្លូវថ្នល់ ដែលមាន ចម្ងាយកំណត់ពីខ្សែបន្ទាត់ផ្លូវថ្នល់។



6

ដូចម្តេចដែលហៅថា ដីចំណីផ្លូវថ្នល់និងការប្រើប្រាស់ដីចំណីផ្លូវថ្នល់(២)

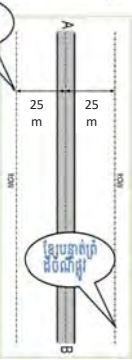
2. ដីចំណីផ្លូវថ្នល់ គឺជាដីរបស់រដ្ឋ ដែលគ្រប់គ្រងដោយសមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ មានដូចជា៖

- ❑ ក្រសួងសាធារណៈ និងដឹកជញ្ជូន៖ គ្រប់គ្រងលើផ្លូវល្បឿនលឿន, ផ្លូវជាតិ ផ្លូវខេត្ត និងផ្លូវផ្សេងទៀតដែលរាជរដ្ឋាភិបាលប្រគល់ឱ្យ។
- ❑ ក្រសួងអភិវឌ្ឍន៍ជនបទ៖ គ្រប់គ្រងលើផ្លូវជនបទ និងផ្លូវផ្សេងទៀតដែលរាជរដ្ឋាភិបាលប្រគល់ឱ្យ។
- ❑ រដ្ឋបាលថ្នាក់ក្រោមជាតិ៖ គ្រប់គ្រងលើផ្លូវក្រុង, ផ្លូវក្រុង, ផ្លូវទីប្រជុំជននានា ដែលបានកសាងដួសផុលថែទាំដោយប្រើប្រាស់ថវិការបស់រដ្ឋបាលថ្នាក់ក្រោម ជាតិ និងថវិកាដែលបានរៀបចំចាត់ចែងដោយរដ្ឋបាលថ្នាក់ក្រោមជាតិ និងផ្លូវ ទាំងឡាយណាដែលបានផ្ទេរមុខងារពីក្រសួងទាំងពីរខាងលើ ព្រមទាំងផ្លូវផ្សេង ទៀតក្រោយពីមានការសម្រេចឯកភាពពីរាជរដ្ឋាភិបាលប្រគល់ឱ្យ។

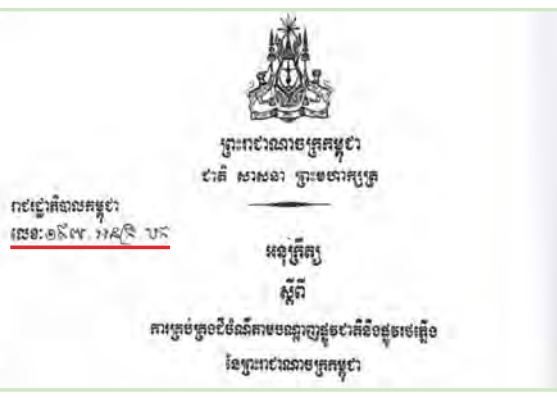
4/18/2019

3

- ខ្សែបន្ទាត់ដីចំណីផ្លូវថ្នល់ សំដៅដល់ខ្សែបន្ទាត់បណ្តាចំណុចត្រូវដីចំណីផ្លូវថ្នល់ ដែលមាន ចម្ងាយកំណត់ពីខ្សែបន្ទាត់ផ្លូវថ្នល់។



7

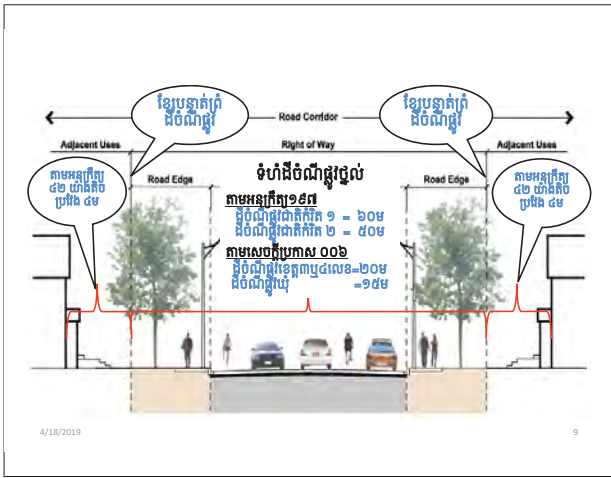


4/18/2019

4



4/18/2019



4/18/2019

9

3. ការប្រើប្រាស់ដីចំណីផ្លូវ

- រាល់ការសាងសង់លើដីសម្រាប់អភិវឌ្ឍន៍ហេដ្ឋារចនាសម្ព័ន្ធផ្លូវថ្នល់ ជាពិសេសលើដីចំណីផ្លូវជាលក្ខណៈអចិន្ត្រៃយ៍ត្រូវបានហាមឃាត់។ លើកលែងតែការសាងសង់ក្នុងគម្រោងចាំបាច់មួយចំនួនដូចជាបរិក្ខារបម្រើឱ្យវិស័យការពារជាតិ សន្តិសុខជាតិ បរិក្ខារបម្រើឱ្យការគ្រប់គ្រង ឬការសាងសង់ផ្លូវថ្នល់បរិក្ខារសំណង់សេវាសាធារណៈ ផ្សេងទៀត ដោយត្រូវស្នើសុំការឯកភាពជាគោលការណ៍ពីក្រសួងកសិកម្ម រុក្ខាប្រមាញ់ និងនេសាទ ដោយមិនត្រូវធ្វើឱ្យប៉ះពាល់ដល់បរិក្ខារសំណង់សម្រាប់សុវត្ថិភាពបច្ចេកទេសឡើយ។

(តាមមាត្រា ១២ នៃច្បាប់ស្តីពី ផ្លូវថ្នល់)

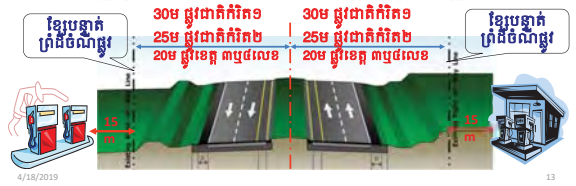
4/18/2019

10

មាត្រា ៣០ នៃច្បាប់ស្តីពីផ្លូវថ្នល់

ដើម្បីធានាដល់ការធ្វើចរាចរណ៍លើផ្លូវល្បឿនលឿន ផ្លូវជាតិ ផ្លូវខេត្ត ប្រកបដោយសុវត្ថិភាព រាល់ការសាងសង់សំណង់ដែលមានច្រកផ្លូវចេញចូលជាប់នឹងផ្លូវថ្នល់ខាងលើនេះ ត្រូវអនុវត្តដូចខាងក្រោម ៖

- ១- ការសាងសង់សំណង់ដូចជា ស្ថានីយប្រេងឥន្ធនៈ ស្ថានីយហ្វូស កន្លែងលាងយានយន្ត យានដ្ឋាន ឬសំណង់ប្រកបដោយលក្ខណៈផ្សេងៗទៀត ដែលមានមនុស្សជួបជុំគ្នាមធ្យមត្រូវស្ថិតក្នុងចម្ងាយយ៉ាងតិច ១៥ (ដប់ប្រាំ) ម៉ែត្រ ពីខ្សែបន្ទាត់ព្រំដីចំណីផ្លូវ ។



4/18/2019

13

- ២- ការសាងសង់មជ្ឈមណ្ឌលពាណិជ្ជកម្ម ពហុកីឡដ្ឋាន ទីលានប្រកួត រោងមហាស្រលាត និង ពេទ្យ គ្រឹះស្ថានសិក្សា ការរៀបចំផ្សារ ផ្សារណាត់ ពិសេសទំនិញ ឬកិច្ចការផ្សេងៗទៀតដែលមានមនុស្សជួបជុំគ្នាច្រើន ត្រូវស្ថិតក្នុងចម្ងាយយ៉ាងតិចចំនួន ៥០ (ហាសិប) ម៉ែត្រ ពីខ្សែបន្ទាត់ព្រំដីចំណីផ្លូវថ្នល់ ។



4/18/2019

14

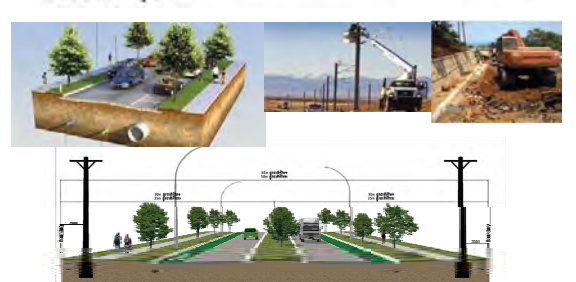
ដូចម្តេចដែលយើងអាច ធ្វើឱ្យផ្លូវ និងការប្រើប្រាស់ដីចំណីផ្លូវ?

- ចិញ្ចឹមផ្លូវ សំដៅដល់ផ្នែកសងខាងនៃទ្រូងផ្លូវក្នុងទីប្រជុំជន ដែលរៀបចំទុកសម្រាប់ធ្វើដើរធ្វើដំណើរ ដាំដើមឈើ និងទម្ងន់ប្រកបបរិក្ខារបម្រើផលប្រយោជន៍សាធារណៈ។
- ចិញ្ចឹមផ្លូវប្រដូរថ្មីរដើម ត្រូវប្រើប្រាស់សម្រាប់តែគោលបំណងក្នុងការធ្វើចរាចរណ៍ដោយចិញ្ចឹមផ្លូវ។
- ចិញ្ចឹមផ្លូវប្រដូរថ្មីរដើម អាចយកទៅប្រើប្រាស់សម្រាប់គោលបំណងផ្សេងទៀតបានស្របទៅតាមបញ្ញត្តិនៃមាត្រា ២៨ នៃច្បាប់ផ្លូវថ្នល់។
- មិនត្រូវអនុវត្តសកម្មភាពដូចខាងក្រោម៖
 - ចតរថយន្តឬយានជំនិះមិនត្រូវតាមដងផ្លូវ ចិញ្ចឹមផ្លូវ និងផ្លូវសម្រាប់ធ្វើដើរទុសពិទីតាំងកំណត់។
 - សាងសង់បារកាត់ទទឹងផ្លូវ ឬទូលបន្ទាយល្បឿន ឬវត្តប្រហាក់ប្រហែលពីលើផ្លូវថ្នល់ដោយគ្មានការអនុញ្ញាត។
 - ធ្វើសកម្មភាពផ្សេងទៀតផ្ទុយនឹងច្បាប់ផ្លូវថ្នល់។

4/18/2019

11

អ្នកធ្វើកិច្ចការសាធារណៈដូចជា ការបោះបង្គោលខ្សែភ្លើង ការដាក់លូ ឬកិច្ចការចាំបាច់ដ៏មួយបន្ថែមក្នុង គ្រឿងផ្លូវ ជាយុទ្ធសាស្ត្រ តែម្តង និងដំណើរការនៃដីចំណីផ្លូវ ត្រូវស្នើសុំការអនុញ្ញាតពីសមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ ។



4/18/2019

15

សំណង់ក្នុងដីចំណីផ្លូវ (កែលម្អទិសដៅដើរ ទ្រូងផ្លូវ)



12

មាត្រា ៣២ នៃច្បាប់ស្តីពីផ្លូវថ្នល់

ការដឹកកប់ ការដឹកតាស់ ការបោះខ្នង ឬសកម្មភាពផ្សេងៗទៀតសម្រាប់បម្រើការងារអាជីវកម្ម ដែលអាចបង្កឱ្យខូចខាតនិងប៉ះពាល់គុណភាពផ្លូវ ជាយ ឬចិញ្ចឹមផ្លូវ ដីចំណីផ្លូវ និងការដាំឱ្យឆ្កាង ផ្សាយពាណិជ្ជកម្ម ឬការលើកតាំងបង្ហាញពាណិជ្ជកម្ម នៅតាមដងផ្លូវថ្នល់ ឬដីចំណីផ្លូវ ត្រូវមានការអនុញ្ញាតជាលាយលក្ខណ៍អក្សរពីសមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ ។ អ្នកអនុវត្តការងារ ត្រូវចាត់វិធានការសណ្តាប់ធ្នាប់ សម្រួលចរាចរណ៍ ការពារនិងឧបទ្វេហេតុផ្សេងៗដែលកើតមានឡើងដោយចៃដន្យ ការពារលើស្ថានភាពឱ្យបានត្រឹមត្រូវ និងត្រូវគោរពតាមការណែនាំរបស់សមត្ថកិច្ចជំនាញ ។

អ្នកអនុវត្តការងារដូចមានចែងក្នុងកថាខណ្ឌខាងលើ បន្ទាប់ពីបញ្ចប់ការងាររបស់ខ្លួន ត្រូវធានាប្រតិភូភាពផ្លូវថ្នល់ឱ្យមានស្ថានភាពដូចដើមវិញ ។

4/18/2019

16

មាត្រា ៣៦ នៃច្បាប់ស្តីពីផ្លូវថ្នល់

បុគ្គលដែលមានបំណងចាក់ដី ឬធ្វើអ្វីមួយលើដីចំណីផ្លូវ សម្រាប់ធ្វើផ្លូវចេញចូលគេហដ្ឋាន ក្រុមហ៊ុន រោងចក្រ សហគ្រាស ឬគំនូងផ្សេងៗជាប់ផ្លូវថ្នល់ ត្រូវដាក់ពាក្យស្នើសុំការអនុញ្ញាតជាលាយលក្ខណ៍អក្សរទៅសមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ ឬអ្នកគ្រប់គ្រងផ្លូវថ្នល់ ហើយអាចអនុវត្តការងាររបស់ខ្លួនបានក្រោយពេលទទួលបានលិខិតអនុញ្ញាតជាផ្លូវការ និងត្រូវគោរពតាមការណែនាំរបស់សមត្ថកិច្ចគ្រប់គ្រងផ្លូវថ្នល់ ។

បែបបទនិងនីតិវិធីនៃការស្នើសុំការអនុញ្ញាត ត្រូវកំណត់ដោយប្រកាសអន្តរក្រសួងរវាងរដ្ឋមន្ត្រីក្រសួងហេដ្ឋារចនាសម្ព័ន្ធ និងដឹកជញ្ជូន និងរដ្ឋមន្ត្រីក្រសួងអភិវឌ្ឍន៍ជនបទ ។

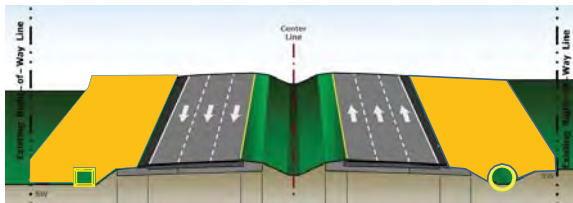


4/18/2019

17



4/18/2019



គោលការណ៍នៃការចាក់បំពេញដីនៅសងខាងផ្លូវ

4/18/2019

18

**ចូលរួមគោរពច្បាប់ផ្លូវថ្នល់ និងអនុវត្តច្បាប់គ្រប់គ្រងដីចំណីផ្លូវ
ដីដើម្បីស្រែចំណីការខាតបង់របស់យើងអំពីអស់គ្នា
[ទន្លេ+ទន្លេ=ជិត]**



4/18/2019

19



4/18/2019

20

(ការវាយតម្លៃសិក្ខាសាលា)

មតិយោបល់របស់អ្នកមានសារសំខាន់ក្នុងការធ្វើឲ្យប្រសើរឡើងការរៀបចំសិក្ខាសាលាលើកក្រោយ។
សូមមេត្តាចំណាយពេល២ទៅ៣នាទីក្នុងការផ្តល់មតិយោបល់ដល់ក្រុមការងាររៀបចំ។

1. បទបង្ហាញទី១: ច្បាប់ បទបញ្ញត្តិ មុខងារ និងការប្រើប្រាស់ដីចំណីផ្លូវ

1.1 តើប្រធានបទស្តីពីដីចំណីផ្លូវ គួរឲ្យចាប់អារម្មណ៍ឬទេ?

មិនចាប់អារម្មណ៍	មិនដឹង	ចាប់អារម្មណ៍ខ្លះ	ចាប់អារម្មណ៍ខ្លាំង
-----------------	--------	------------------	--------------------

1.2 ក្រោយពីបានស្តាប់បទបង្ហាញ និងកិច្ចពិភាក្សា តើអ្នកយល់ដឹងពីដីចំណីផ្លូវកម្រិតណាដែរ?

អត់យល់	យល់មិនច្បាស់	យល់ខ្លះ	យល់ច្បាស់
--------	--------------	---------	-----------

1.3. តើអ្នកនឹងចូលរួមថែរក្សាដីចំណីផ្លូវដោយមិនរំលោភបំពានដីចំណីផ្លូវដែរឬទេ?

មិនចូលរួម	មិនដឹង	ចូលរួម
-----------	--------	--------

ហេតុអ្វី

2. ការរៀបចំសិក្ខាសាលា

2.1 តើសិក្ខាសាលារៀបចំបានល្អទេ?

មិនល្អ	មិនដឹង	ល្អ
--------	--------	-----

3.2 រយៈពេលនៃការរៀបចំសិក្ខាសាលា

ខ្លីពេក	ល្មម	វែងពេក
---------	------	--------

3. ប្រសិនបើមានមតិយោបល់បន្ថែម សូមមេត្តារៀបរាប់ខាងក្រោម

សូមអរគុណ

សូមប្រគល់ក្រដាសនេះទៅឲ្យក្រុមអ្នករៀបចំសិក្ខាសាលានៅពេលបញ្ចប់ ។



Date: 24th April, 2019
Time: 9:00am-10:30am
Location: Bun Rany Hun Sen Rolear B'ear High School, Kampong Chhnang Province
Topic: Public Consultation Meeting (PCM) on Public Raising Awareness on Right of Way

Attendance List

No	Name	Sex	Position	Institutes	Phone
MPWT					
1	Chea Samnang	M	Chief Office	ROW Management Office, RID, MPWT	
DPWT: Kampong Chhnang Province					
2	Chhay Leaphea	M	Deputy Director	Kampong Chhnang DPWT	
3	Keo Vit	M	Chief Office	DPWT	
4	Eang Hour	M	Chief Office	DPWT	
5	Don Sokly	M	Deputy Head of Office	Technical Office, DPWT	
6	Sok Chanvesna	M	Deputy Head of Office	Drainage Office, DPWT	
7	Leng Vesna	M	Official	DPWT	
8	Ouk Sophea	M	Official	DPWT	
9	Heang Sophal	M	Official	DPWT	
10	Lor Prostith	M	Official	DPWT	
11	Nin Nimol	F	Official	DPWT	
12	Ai Ong	M	Contract Officer	DPWT	
13	Trasom Sophineath	F	Contract Officer	DPWT	
14	Keo Monorom	F	Contract Officer	DPWT	
15	Say Somotha	F	Contract Officer	DPWT	
School Director and Teachers					
16	Sao Sambath	M	Deputy School Director	Rolear B'ear High School	-
17	Soeng Sarith	M	Teacher	-	-
18	Long Makara	M	Teacher	-	-
19	Hem Phonnaroth	F	Teacher	-	-
20	Som Chanthy	F	Teacher	-	-

1



52	Chan Chamreun	M	Student	-	-
53	Phat Sokchamreun	M	Student	-	-
54	Khiev Somen	M	Student	-	-
55	Soem Rottna	M	Student	-	-
56	Soth Virak	M	Student	-	-
57	Aou Lima	F	Student	-	-
58	Vong Narot	M	Student	-	-
59	Son Naren	F	Student	-	-
60	An Sreylin	F	Student	-	-
61	Pov Kakada	F	Student	-	-
62	Pha Sreyloem	F	Student	-	-
63	Sous Visal	M	Student	-	-
64	Ro Sokun	M	Student	-	-
65	Chon Saoron	M	Student	-	-
66	Run Sokunthea	M	Student	-	-
67	Sea Reaklin	F	Student	-	-
68	Khi Sokleab	F	Student	-	-
69	Sai Chanthou	F	Student	-	-
70	Soem Vicheka	F	Student	-	-
71	Yong Rattana	F	Student	-	-
72	Chhom Kimseak	F	Student	-	-
73	Aok Mlis	F	Student	-	-
74	Yon Siyat	F	Student	-	-
75	Sok Sethary	F	Student	-	-
76	Chor Savy	F	Student	-	-
77	Chan Sorithy	M	Student	-	-
78	Min Hanafy	M	Student	-	-
79	Om Raksmeay	M	Student	-	-
80	An Thoden	M	Student	-	-
81	Oul Phikan	M	Student	-	-
82	Vooun Theara	F	Student	-	-
83	Prom Sarun	F	Student	-	-

3



Student					
21	Aou Lima	F	Student	Rolear B'ear High School	-
22	Horn Sreynich	F	Student	-	-
23	Morn Vaha	M	Student	-	-
24	Chim Phanny	F	Student	-	-
25	On Sreynang	F	Student	-	-
26	Vin Vita	M	Student	-	-
27	Phon Ariya	F	Student	-	-
28	Morn Tola	F	Student	-	-
29	Hou Sreynet	F	Student	-	-
30	Brem Alody	F	Student	-	-
31	Heng Sreyla	F	Student	-	-
32	Phon Sophoeun	F	Student	-	-
33	Saeb Sreyroth	F	Student	-	-
34	Phon Channa	F	Student	-	-
35	Than Sreynou	F	Student	-	-
36	Eng Sreynin	F	Student	-	-
37	Leng Sreynich	F	Student	-	-
38	Ly Fariya	F	Student	-	-
39	San Sreynit	F	Student	-	-
40	Rin Channa	F	Student	-	-
41	Ly Chavariyah	F	Student	-	-
42	Oeun Sophea	F	Student	-	-
43	Heng Phanha	F	Student	-	-
44	Siem Timhour	M	Student	-	-
45	Rooun Sreykhouch	F	Student	-	-
46	Song Sreyroth	F	Student	-	-
47	Yong Sreyleab	F	Student	-	-
48	Chhoeun Sokuntheary	F	Student	-	-
49	Von Solai	F	Student	-	-
50	Touch Sakana	F	Student	-	-
51	Chhay Meansa	F	Student	-	-

2



84	phal Lychiv	M	Student	-	-
85	Ei Aomara	F	Student	-	-
86	Phon Leakena	F	Student	-	-
87	Keo Monyroth	F	Student	-	-
88	Ban Chan eng	F	Student	-	-
89	Bich Morokot	F	Student	-	-
90	Om Sreynoch	F	Student	-	-
91	Vin Rottana	M	Student	-	-
92	Seng Makara	M	Student	-	-
93	Sien Piti	M	Student	-	-
94	Chroeun Sreynich	F	Student	-	-
95	Hoeun Thavvy	F	Student	-	-
96	Kim Sreyeab	F	Student	-	-
97	Bich Pisal	M	Student	-	-
98	Sun Soknat	M	Student	-	-
99	Long Lon	F	Student	-	-
100	Khim Sophoan	F	Student	-	-
101	Vooun Sreypich	F	Student	-	-
102	Hea Sophin	M	Student	-	-
103	Sos Muslim	M	Student	-	-
104	Yan Ying	M	Student	-	-
105	Hin Sothea	M	Student	-	-
JICA Project Team					
106	TSUCHIDA Takayuki	M	Team Leader	CESCoR Project	
107	Masaki OCHI	M	Team Member	CESCoR Project	
108	Ches Sophy	F	Assistant	CESCoR Project	
109	Penh Socheat	M	Assistant	CESCoR Project	
110	Bun Sereyvuth	M	Assistant	CESCoR Project	

4

1. 1st Presentation: Law, Regulation, Function and Utilization of Right of Way (ROW)

1.1 Topics were interesting.

1.2 After presentation and discussion, how much do you understand it?

1.3 Are you going to maintain the ROW by not illegally encroaching the ROW?
why?
Reason:

1-No Interest	2-Don't Know	3-Less Interest	4-Much Interest
1-Don't Understand	2-Not Clearly Understand	3-Partially Understand	4-Fully Understand
1-Not Participate	2-Don't Know	3-Participate	

2. PCM Organization

2.1 Seminar was nicely organized.

2.2 The time for PCM was

a-Not Good	b-Don't Know	c-Good
a-Too Short	b-Just Right	c-Too Long

3. If you any specific comments, please kindly share with us as below:

Comments

20190424_PCM Students Evaluation at Kampong Chhnang

No	Q1				Q2		Q3	
	1.1	1.2	1.3	Reason	2.1	2.2		
S01	4	3	3		1	3	2	1
S02	4	3	3		1	3	2	1
S03	4	3	3		1	3	2	
S04	4	3	3		1	3	2	1
S05	4	4	3			3	2	
S06	4	4	3			3	2	
S07	4	4	3			3	2	
S08	4	4	3			3	2	
S09	4	4	3			3	2	
S10	4	3	3		1	3	2	1
S11	4	3	3		1	3	2	1
S12	4	3	3		1	3	2	
S13	4	3	3		1	3	2	1
S14	4	3	3		1	3	2	1
S15	3	3	3		1	3	2	
S16	3		3		1	3	2	
S17	4	3	3		1	3	2	1
S18	4	3	3		1	3	2	1
S19	4	3	3		1	3	2	1
S20	4	3	3		1	3	2	1
S21	3	3	3		1	3	2	
S22	4	3	3		1	3	2	1
S23	3	3	3		1	3	2	1
S24	3	3	3		1	3	2	1
S25	3	4	3		1	3	2	
S26	4	3	3		1	3	2	
S27	3	3	3		1	3	2	
S28	3	3	3		1	3	2	
S29	3	3	3		1	3	2	
S30	3	3	3		1	3	2	
S31	3	3	3		1	3	2	1
S32	4	3	3			3	2	
S33	4	3	3		1	3	2	
S34	4	4	3		1	3	2	
S35	3	3	3		1	3	2	1
S36	3	3	3		1	3	2	
S37	3	3	3		1	3	2	1
S38	4	3	3		1	3	2	1
S39	4	3	3		1	3	2	1
S40	3	3	3		1	3	2	1
S41	4	3	3		1	3	2	1
S42	4	3	3		1	3	2	
S43	4	4	3		1	3	2	
S44	4	3	3		1	3	2	1
S45	4	4	3		1	3	2	
S46	4	3	3		1	3	2	
S47	4	4	3		1	3	2	1
S48	3	3	3			3	2	1
S49	3	3	3			3	2	1
S50	4	3	3		1	3	2	1
S51	4	3	3		1	3	2	
S52	4	4	3		1	3	2	1
S53	4	3	3		1	3	2	1
S54	4	3	3		1	3	2	
S55	4	3	3		1	3	2	1
S56	4	3	3		1	3	2	

S57	4	3	3	1	3	2	
S58	4	3	3	1	3	2	1
S59	4	3	3	1	3	2	1
S60	4	4	3	1	3	2	
S61	4	3	3	1	3	2	1
S62	4	4	3	1	3	2	
S63	4	3	3		3	2	
S64	4	4	3		3	2	
S65	4	4	3		3	2	
S66	4	4	3		3	2	
S67	4	4	3		3	2	
S68	4	4	3	1	3	2	1
S69	4	4	3		3	2	
S70	4	3	3		3	2	
S71	3	3	3	1	3	2	
S72	3	4	3	1	3	2	1
S73	4	3	3	1	3	2	1
S74	4	4	3	1	3	2	1
S75	3	2	3	1	3	2	1
S76	3	2	3	1	3	2	1
S77	4	4	3	1	3	2	1
S78	4	3	3	1	3	2	1
S79	4	4	3		3	2	1
S80	4		3	1	3	2	
S81	4	3	3	1	3	2	1
S82	4	3	3	1	3	2	
S83	4	4	3	1	3	2	
S84	4	3	3		3	2	
S85	4	3	3		3	2	
S86	4	4	3	1	3	2	
S87	4	2	3	1	3	2	
S88	4	4	3	1	3	2	1
S89	3	3	3	1	3	2	
S90	3	4	3	1	3	1	
S91	3	3	3	1	3	2	
S92	4	4	3	1	3	2	
S93	4	4	3		3	2	1
S94	4	3	3		3	2	
S95	4	3	3		3	2	
S96	4	3	3	1	3	2	1
S97	4	4	3	1	3	2	
1	0	0	0	76	0	1	45
2	0	3	0		0	96	
3	24	62	97		97	0	
4	73	30					

Summary of PCM Student Evaluation (On 24th Apr 2019 at Kampong Chhnang)

1.1.1 Presentation very effective, function and utilization of Right of Way (ROW)	0	0	0	24	73	Total
1.1.1 Topic was interesting	0	3	62	30		97
1.2. After presentation and discussion, how much can you understand it?	0	0	0	97		97
1.3. Are you going to maintain the ROW by not illegally encroaching the ROW? If Yes, why? Number of Reasons or Comments	76	0	0	0	0	76
Percentage						
1.1. Topic was interesting	1-Not interested	2-Don't know	3-Yes, Interest	4-Much Interest		
1.2. After presentation and discussion, how much can you understand it?	1-Don't Understand	2-Understand	3-Understand	4-Understand		
1.3. Are you going to maintain the ROW by not illegally encroaching the ROW? If Yes, why? Number of Reasons or Comments	1-Not interested	2-Don't know	3-Yes, Interest	4-Much Interest		
	0%	3%	62%	32%		
	0%	0%	3%	97%		
	0%	0%	100%			
	Error					

2. PCM Organization	0	0	0	97	Total
2.1. PCM was nicely organized	0	0	0	97	97
2.2. The time for PCM was	1	96	0		
Percentage					
2.1. PCM was nicely organized	a-Not Good	b-Don't know	c-Good		
2.2. The time for PCM was	a-Too Short	b-Just Right	c-Too Long		
	1%	99%	0%		

3. If you have any specific comments, please kindly share with us as below:
Number of Comments:

**The Project for Capacity Enhancement on Environmental and Social Considerations in
Implementing Agency in Road Sector in Cambodia (CESCoR)
Pilot Project CSI Activity Report**

DATE:	2018/05/31
PLACE:	Kampong Chhnang
TIME:	08:00~12:00
OBSERVER:	Masaki OCHI, James WATSON, Socheat Penh, Khemera Douk
OBJECT:	UAV operation training

ACTIVITY:
<p>Explanation of the objective of UAV operation, which is to collect aerial image for the current status identification. The AOI (Area Of Interest) = aerial photography area is 50m both sides from the road center line, and 500m length along the road. Due to the battery capacity of the UAV. Also there was explanation of flight planning, auto flight and safety procedure to follow. After each auto flight, the PTF members had a chance to operate the UAV manually to experience how the UAV moves and understand its' features.</p>

	
UAV operation explanation	

**The Project for Capacity Enhancement on Environmental and Social Considerations in
Implementing Agency in Road Sector in Cambodia (CESCoR)
Pilot Project CSI Activity Report**

DATE:	2018/06/07
PLACE:	RID meeting room, MPWT, Phnom Penh
TIME:	14:00~17:00
OBSERVER:	James K. WATSON, Socheat Penh, Khemera Douk, Mut Samon
OBJECT:	GIS training

ACTIVITY:

Explanation of the objective of the feature and basic knowledge of GIS (Geo-spatial Information System) and the data.

GIS is a software which can view, overlay and analyze geo-spatial data. The data is basically categorized as Raster data (pixel base image data) and Vector data (coordinate base point, line and polygon data).

Basic operation of GIS and data processing operation was explained to the PTF members by a “Hands on training” with their own laptops.

We have used the Cambodian Administration boundary data to change visualization and label the attribute information. Also used the national road data to process UAV flight blocks, by processing tools such as Qchainage, split line at point, buffer.



GIS training





GIS training

**The Project for Capacity Enhancement on Environmental and Social Considerations in
Implementing Agency in Road Sector in Cambodia (CESCoR)
Pilot Project CSI Activity Report**

DATE:	2018/06/08
PLACE:	Kampong Chhnang
TIME:	08:00~12:00
OBSERVER:	Masaki OCHI, James K. WATSON, Khemera Douk
OBJECT:	UAV operation training

ACTIVITY:
<p>Explanation of the objective of UAV operation, which is to collect aerial image for the current status identification. The AOI (Area Of Interest) = aerial photography area is 50m both sides from the road center line, and 500m length along the road. Due to the battery capacity of the UAV. Also there was explanation of flight planning, auto flight and safety procedure to follow. After each auto flight, the PTF members had a chance to operate the UAV manually to experience how the UAV moves and understand its' features.</p>

	
UAV operation explanation	UAV operation explanation

**The Project for Capacity Enhancement on Environmental and Social Considerations in
Implementing Agency in Road Sector in Cambodia (CESCoR)
Pilot Project CSI Activity Report**

DATE:	2018/06/12
PLACE:	Kampong Chhnang
TIME:	08:00~12:00
OBSERVER:	James K. WATSON
OBJECT:	Field Survey training

ACTIVITY:
<p>Explanation of the objective of Field Survey and a “Hands on” experience of the work has been made.</p> <p>The field survey is a ground truth verification work, of the GIS data created in the prior work. The work includes verification of the data, adding new ground features to the map, and taking ground photos as evidence.</p> <p>Every ground feature will be given a code (such as residential building is 1006), and the type of encroachment will be categorized with a branch code (if the residential bldg. has a eave the code will be 1006-2).</p> <p>In this activity, the PTF members made some comments as follows:</p> <ul style="list-style-type: none"> > Signboard should be recorded with ground photo. Small private signboards’ are un-necessary. > Access road should be recorded with ground photo for discussion. We can decide in future. > Well and Cemetery should be added as a feature to be recorded.



Field survey explanation



Field survey explanation

**The Project for Capacity Enhancement on Environmental and Social Considerations in
Implementing Agency in Road Sector in Cambodia (CESCoR)
Pilot Project CSI Activity Report**

DATE:	2018/06/15
PLACE:	Kampong Chhnang
TIME:	08:30~12:30
OBSERVER:	James WATSON and Soheat Penh
OBJECT:	UAV operation training

ACTIVITY:

Explanation of the objective of UAV operation, which is to collect aerial image for the current status identification. The AOI (Area of Interest) = aerial photography area is 50m both sides from the road center line, and 500m length along the road. Due to the battery capacity of the UAV. Also there was explanation of flight planning, auto flight and safety procedure to follow. After each auto flight, the PTF members had a chance to operate the UAV manually to experience how the UAV moves and understand its' features.

UAV survey team suggested to have a bag for UAV battery.



UAV operation explanation



UAV practice

J4-3: Training Records on Pilot Project



WORKSHOP FOR PRACTICE OF ROW MANAGEMENT SYSTEM

DISCUSSION MEMO

Date & Time :	July 31, 2019 from 9:00am – 12:00pm
Place	SUNWAY Hotel, Phnom Penh
Attendees :	Mr. Thou Samnang, Deputy Director General, General Directorate of Techniques, MPWT Mr. Khoun Kompheak, Deputy Director, RID/MPWT Mr. Chea Samnang, Chief of ROW Office, RID/MPWT Mr. Hay Chandara, Deputy Chief of ROW Office, RID MPWT Ms. Oum Sokvasey, Deputy Chief Officer, ICD/MPWT Ms. Eam Sokchea, Deputy Chief of Environment and Public Service Office, PID/MPWT And Other MPWT officials and DPWT officials (see the attendant list in this memo)
Project Team :	Dr. Tsuchida, Mr. Kumagai, Mr. Watson, Mr. Kiyota, Ms. Sophy, Mr. Socheat, Mr. Luch, Mr. Sereyvuth and Mr. Samon
Agenda / Discussion Points :	- To train the DPWTs' Officials on ROW management System through the presentations from ROW TF members (MPWT's Officials); - To conduct the field practice for field survey and patrol.

1- Opening Remark by Mr. Thou Samnang, Deputy Director General of Techniques, MPWT

2- Presentation on outline of ROW Management Methods by Mr. Chea Samnang

Comments, Questions and Answers:

- Opinion 1 from Deputy Director of Kandal DPWT:

We have known that ROW is a hot issue. Each province has difficulties to deal with it. It is very hard for Kandal DPWT because Kandal surrounds the Phnom Penh city and has many National Roads such as No.1, 2, 3, 4,5, 6, etc. Also, Kandal has many belt roads from Phnom Penh city. If we use drone to capture the situation of ROW in Kandal province. You will see that ROW is full of buildings. Although we have a Master Plan classifying the type of land, it is still difficult to manage. Right now, we have many hotels from Chinese Investment. They use heavy equipment destroying the embankment of ROW. When we complain to them, they said that they have brought a lot of investment to this province, we should cooperate with them. On another hand, we have worked also



with local authorities to deal with illegal encroachment of ROW and land filling which its elevation is higher than the road's; but local authorities cannot touch the local people due to the impact on the election.

3- Presentation on Field Survey for Current Status Identification (CSI) by Mr. Kaing Theara

Comments, Questions and Answers:

- Opinion 1 from Mr. Thou Samnang (Chairman):

MPWT has the data of 360° Video of roads and buildings (including the GPS and central line). I am not sure if these data can be used with the database of project.

- Opinion 2 from Mr. Kompheak:

Regarding the determination of center lines (existing one), I hope the DPWT will cooperate with MPWT to determine the central lines in order to avoid any bad impact on the people living on road; specially when central line moves to only side of road.

- Opinion 3 from Deputy Director of Kandal DPWT:

DPWT does not have the data of the existing center lines. I think MPWT should have all of these data because MPWT has data of foreign projects.

We should have special sub-decree to mention the clear length of ROW in the city and outside the city. Local people don't know the law. They always say why the people in the city or urban areas can build the houses very close to the road; and they living in the rural areas need to build houses far from the road.

Additionally, we should have a law to fine or punish the illegal ROW users (I am not sure if we already have such kind of law).

- Opinion 4 from Mr. Chea Samnang:

We understand that DPWT has difficulties; we at this level also have difficulties. Talking about issuing the special sub-decree is too far from our competence. Most of projects have solved the compensation only inside the COI.

For our workshop today is only to make us aware of current situation, and illegal encroachment prevention. Based on these, we can make a report to our higher-ranking people.

- Opinion 5 from Mr. Thou Samnang (Chairman):

ROW is a hot issue and we have lost a lot of budget due to road damage. DPWT can prepare report and submit to MPWT. Only verbal complaint, MPWT does not know your effort. With the report, MPWT can be aware of this and will try to solve.



- Opinion 6 from Mr. Chea Samnang:

Actually, Kandal DPWT already submitted the report to MPWT. In the report, DPWT asked for the lawyer to solve the problem. MPWT already took this case.

- Question 1 from Kampong Chhnang DPWT:

Does the map include the record of compensation? So far, we have compensation only inside the COI (20m from central line). How about the another 10m, why there is no compensation?

- Answer 1 by Mr. Kaing Theara:

Regarding the compensation works, it is under MEF. Our work is only to capture the current status. Then, we can use it to compare the situation in the future.

4- Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches by Mr. Khai Saray:

Comments, Questions and Answers: None

5- Presentation on ROW Management Activity and Plan by Mr. Chea Samnang

Comments, Questions and Answers:

- Question 1 from Deputy Director of Kandal DPWT:

It is hard to do regular Patrol because we do not have enough budget. Then, still new houses are inside the ROW. What is the process of Patrol? For the mapping, after we clear the COI then people start to come back. Do we have any committee to stop them?

- Answer 1 from Mr. Chea Samnang:

Our project has prepared the ROW Management Guidelines (RMG), within this year so we can use. The patrol process is also mentioned in the RMG. Of course, patrol requires a lot of money. In case of AZ company which took after the National Road No.4. They spent about 1.5million USD per year for patrol. If we propose such kind of among to higher level, I am sure this proposal will be rejected. My presentation here hopefully can reduce the compensation cost in the future.

For Mapping, we create it mainly for the management works; not for compensation. However, it is a good evidence to report to MEF to prepare the budget for resettlement and to our local authorities to take action to prevent the illegal encroachment.



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



****Afternoon session:**

1- Comprehensive Test:

2- Presentation on Implementation of Field Survey (CSI) and Patrol (IEP) by JICA Team (Cam Info Service Company):

Question and Answer:

Participant: Can we know distance between “Current Location” and “target CSI point”?

JICA Team: There is a measurement tool that we can estimate appreciate distance between “Current Location” and “target CSI point”.

Participant: Can surveyor upload photo into the application?

JICA Team: Application does not allow surveyor to upload photo into the application, the photo can be captured through Camera build-in application only.

Participant: Coordination system of captured photo is same with coordination of “Current Location”, it is not coordination system of CSI point, right?

JICA Team: No, it is not. Coordination system of captured photo is same with coordination of CSI point.

Participant: Can we track or get direction between our current location and CSI point?

JICA Team: We don’t have function to track or get direction between our current location and CSI point.

Participant: As the application can work offline, how can captured photo contain coordination system?



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



JICA Team: Captured photo has information of coordination system when we turn on GPS on tablet.

Participant: Why are there 4 times patrol in “IEP” tap? Is it possible to have more than 4 times patrol?

JICA Team: We will discuss with JICA team to clarify on this matter.

3- Field Practice for Field Survey and Patrol at MPWT South Gate:





Attendance List

No	Name	Position	Department/Ministry	Phone
MPWT-RID				
1	Mr. Thou Samnang	Deputy Director General	General Directorate of Techniques, MPWT	
2	Mr. Khuon Kompheak	Deputy Director	RID/MPWT	
3	Mr. Chea Samnang	Chief of ROW Office	RID/MPWT	
4	Mr. Hay Chandara	Deputy Chief of ROW Office	RID/MPWT	
5	Mr. Khai Saray	Deputy Chief of ROW Office	RID/MPWT	
6	Mr. Sokun Piseth	Deputy Chief of Office	RID/MPWT	
7	Mr. Chak Borith	Chief Officer	RID/MPWT	
8	Mr. Kaing Theara	Officer	RID/MPWT	
9	Mr. Sao Premarak	Deputy Chief of Office	RID/MPWT	
10	Mr. Manh Vutha	Deputy Chief of Office	RID/MPWT	
11	Mr. Song Kimheng	Officer	RID/MPWT	
12	Mr. Sok Chandy	Officer	RID/MPWT	
13	Mr. Sour Keasithising	Officer	RID/MPWT	
MPWT-PID				
14	Ms. Eam Sokchea	Deputy Chief of Office	PID/MPWT	

6

CTI Engineering International Co., Ltd. (CTII) Environment and Social Infrastructure Consultant Co., Ltd. (ESIC) Harshin Expressway Company Limited (HEX) Joint Venture
Address: JICA Project Office, c/o International Cooperation Department, MPWT, Corner Norodom Blvd, Street 106, Phnom Penh, Tel: +855-(0)61 960 213



31	Mr. Kang Kimchhun	Chief of Office	DPWT	
32	Mr. Bun Soupheng	Officer	DPWT	
Others				
33	Ms. Kheng Chanoronay	Student (intern at MPWT)	ITC	
34	Ms. Sreang Sreymom	Student (intern at MPWT)	ITC	
35	Mr. Hean Kongheng	Student (intern at MPWT)	ITC	
Cam Info Service				
36	Mr. Sous Thidet	App developer	CIS	
37	Mr. Sun Socheat	App Developer	CIS	
38	Mr. Chek Sophal	App Developer	CIS	
JICA Project Team_CESCoR				
39	Dr. Tsuchida Takayuki	Team Leader	JICA Project Team	
40	Mr. Kumagai Takahiro	Project Coordinator	JICA Project Team	
41	Mr. Kiyota Daisaku		JICA Project Team	
42	Mr. James Kazumori WATSON		JICA Project Team	
43	Mr. Watanabe			
44	Ms. Ches Sophy	Project Assistant	JICA Project Team	
45	Mr. Penh Socheat	Technical Assistant	JICA Project Team	
46	Mr. Bun Sereyvuth	Project Assistant	JICA Project Team	
47	Mr. Mut Samon	Assistant	JICA Project Team	

8

CTI Engineering International Co., Ltd. (CTII) Environment and Social Infrastructure Consultant Co., Ltd. (ESIC) Harshin Expressway Company Limited (HEX) Joint Venture
Address: JICA Project Office, c/o International Cooperation Department, MPWT, Corner Norodom Blvd, Street 106, Phnom Penh, Tel: +855-(0)61 960 213



15	Mr. Kong Youreth	Chief Officer	PID/MPWT	
16	Mr. Oeng Kimhak	Deputy Chief Officer	PID/MPWT	
MPWT-ICD				
17	Ms. Oum Sokvasey	Chief Officer	ICD/MPWT	
18	Mr. Peang Samoetun	Chief Officer	ICD/MPWT	
DPWT-Kandal Province				
19	Mr. On Raksmeay	Deputy Director	DPWT	
20	Mr. Duong Vannak	Deputy Officer	DPWT	
DPWT-Battambang Province				
21	Mr. Eap Visoth	Deputy Director	DPWT	
22	Mr. San Sereisith	Chief Officer	DPWT	
DPWT-Banteay Meanchey Province				
23	Mr. Chea Dararith	Officer	DPWT	
24	Mr. Kim Sovannchhetra	Officer	DPWT	
25	Mr. Ou Sinith	Officer	DPWT	
DPWT-Kampong Chhnang Province				
26	Mr. Chhay Leaphea	Deputy Director	DPWT	
27	Mr. Ieng Huo	Chief of Public Works Office	DPWT	
28	Mr. Khut Khemra	Officer	DPWT	
29	Mr. Leng Ratha	Officer	DPWT	
DPWT-Pursat Province				
30	Mr. Sy Sereyvath	Officer	DPWT	

7

CTI Engineering International Co., Ltd. (CTII) Environment and Social Infrastructure Consultant Co., Ltd. (ESIC) Harshin Expressway Company Limited (HEX) Joint Venture
Address: JICA Project Office, c/o International Cooperation Department, MPWT, Corner Norodom Blvd, Street 106, Phnom Penh, Tel: +855-(0)61 960 213



48	Mr. Preah Loch	Assistant	JICA Project Team	
----	----------------	-----------	-------------------	--

9

CTI Engineering International Co., Ltd. (CTII) Environment and Social Infrastructure Consultant Co., Ltd. (ESIC) Harshin Expressway Company Limited (HEX) Joint Venture
Address: JICA Project Office, c/o International Cooperation Department, MPWT, Corner Norodom Blvd, Street 106, Phnom Penh, Tel: +855-(0)61 960 213



WORKSHOP FOR PRACTICE OF ROW MANAGEMENT SYSTEM

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

31ST JULY, 2019

SUNWAY HOTEL, PHNOM PENH



FOR MORE INFORMATION CONTACT: OFFICE +855(0)61-960-213

AGENDA

Workshop for Practice of ROW Management System The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

SUNWAY Hotel, Phnom Penh, 31st July 2019

Target Participants: DPWTs in Kandal, Kampong Chhnang, Pursat, Battambang and Banteay Meanchey

Time	Program	Content
08:30-08:45	Registration	
08:45-08:50	Cambodian National Anthem	
08:50-08:55	Opening Remarks H.E. NOU Vaddhanak, Director General of General Directorate of Techniques, MPWT	
08:55-09:25	Presentation on Outline for ROW Management Methods Mr. CHEA Samnang, Office Chief of ROW, RID, MPWT	1. Legal Framework, 2. Structure of CSI (RMD, RMM, UAV and Field survey), 3. Structure of IEP (Hard and Soft Approaches)
09:25-10:10	Presentation on Field Survey for Current Status Identification (CSI) Mr. KAING Theara, Official, RID, MPWT	1. Outline of Field Survey 2. Detailed Procedure for Field survey 3. Data collection and utilization by survey result (data analysis)
10:10-10:25	Coffee Break	
10:25-11:10	Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches Mr. KHAI Saray, Deputy Office Chief of ROW, RID, MPWT	1. Type of IEP approaches (Soft and Hard approach including typical cross section for future development) 2. Procedure for Soft Approaches such as Conduct PCM, Patrol and Provide ROW usage permission
11:10-11:40	Presentation on ROW Management Activity and Plan Mr. CHEA Samnang, Office Chief of ROW, RID, MPWT	1. Priority Activities (CSI, PCM and ROW Pole Installation) 2. Future Development Plan
11:40-11:55	Q&A Session	
11:55-12:00	Closing Remarks H.E. NOU Vaddhanak, Director General of General Directorate of Techniques, MPWT	
12:00-13:30	Luncheon	
13:30-14:00	Comprehension Test for Participants	
14:00-14:30	Presentation on Implementation of Field Survey (CSI) and Patrol (IEP) JICA Project Team	1. Procedures for Field Survey 2. Procedures for Patrol 3. How to use Tablet App for Field survey and Patrol
14:30-15:00	Result of Comprehension Test	
15:00-16:30	Field Practice for Field Survey and Patrol at MPWT South Gate, JICA Project Team	

Note: All Presentations will be English, verbal speech in Khmer

CESCOr PROJECT INTRODUCTION

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

Table of Contents

- CESCOr Project Introduction
- ROW Management
- Pilot Project

CESCOr PROJECT INTRODUCTION

PROJECT OUTPUTS

Project Period:

The project has been funded from JICA committed for the period from Jan. 2017 to Dec. 2019.

Project Goal:

Environmental and Social Consideration (ESC) in road sector is implemented properly by MPWT.

Project Purpose:

Capacity of MPWT officials on ESC is enhanced through applying Road Environmental Guidelines (REG) and Road Management System (RMS).

PROJECT OUTLINE

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

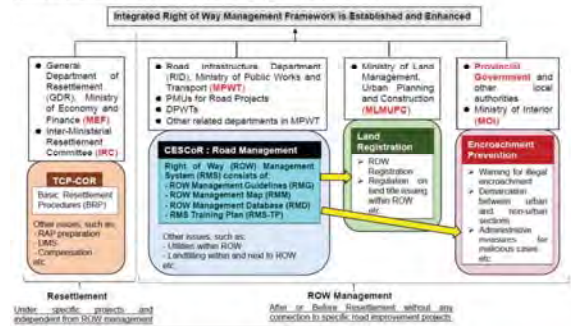
Note: REG: Road Environment Guideline, RMS: ROW Management System, EIA: Environmental Impact Assessment, EMP: Environmental Management Plan

OUTLINE

Output 3:	Implementation framework of SC related to ROW management is strengthened by establishing RMS
PURPOSE:	Capacity of Social Considerations (SC) required for ROW management is strengthened as a component of CESCOr Project, funded by JICA
ACTIVITY:	<ol style="list-style-type: none"> 1) Create RMG (ROW Management Guideline) 2) Create RMM/RMD as a result of Pilot Project 3) Create RMS-TP and Capacity building training to MPWT and DPWT
METHOD:	Specify a area to implement a pilot project to study the feasibility of the system. The system will be applied to NR5 has been selected for the rapid development. Target Area along National Road No.5 in four Provinces:
TARGET AREA:	<ol style="list-style-type: none"> 1) KAMPONG CHHNANG Province 2) PURSAT Province 3) BATTAMBANG Province 4) BANTEAY MEANCHHEY Province

INTEGRATED ROW MANAGEMENT FRAMEWORK

Chart: ROW Management and Target Area of CESCOr (including activities on EIA and EMP)



ROW MANAGEMENT

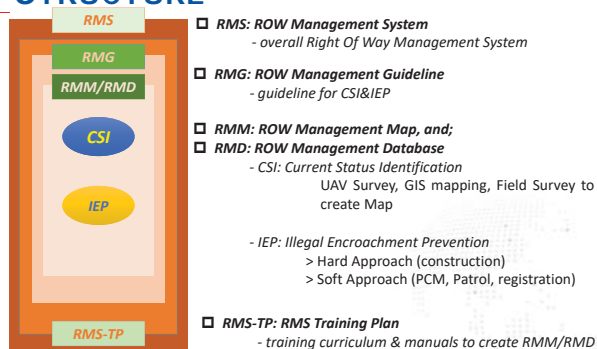
LEGAL FRAMEWORK FOR RIGHT OF WAY(ROW)

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

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)	
2-digits Number National Roads		25 m(※3)	25 m(※3)
Provincial roads		20 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

STRUCTURE



CSI ROLE

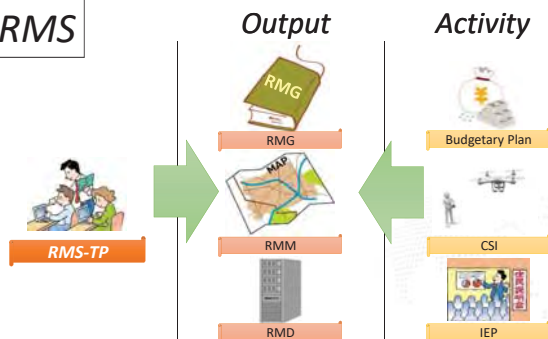
ITEM		MPWT	DPWT	LOCAL AUTHORITY
KICKOFF MTG	Arrangement	✓	✓	
	Implementation	✓	✓	✓
UAV SURVEY	Flight permission	✓	✓	✓
	Flight plan	✓		
	UAV survey	✓	✓	
OFFICE WORK	Supervision (for outsourcing)	✓		
	Image processing	✓		
FIELD SURVEY	Mapping (data production)	✓		
	FS permission	✓	✓	✓
GIS	Field survey	✓	✓	
	Supervision	✓		
	data finalization	✓		

IEP ROLE

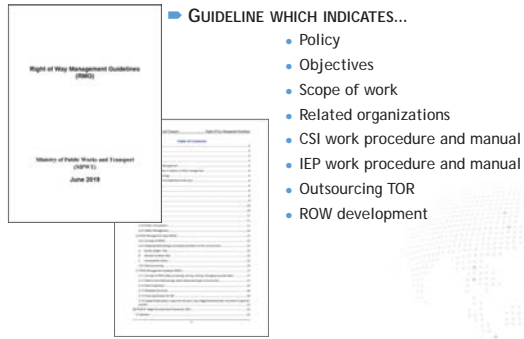
ITEM		MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification		✓				
Raise awareness	1) PCM	✓	✓	✓		
	2) High school / University	✓				✓
	3) Local government office	✓	✓	✓	✓	
Monitoring & intervention	1) Regular patrol	✓	✓	✓		
	2) Collaborating w/ local authorities	✓	✓	✓		
	3) Appealing to court	✓	✓	✓		✓
Permission & Registration	1) ROW permit	✓	✓	✓		
	2) ROW registration	✓	✓	✓	✓	
	3) Access road permit	✓	✓			✓
Supervision	1) Record of "raising awareness"	✓	✓			
	2) Record of "Monitoring"	✓	✓			
	3) Record of "Permission"	✓	✓			

CONCEPT

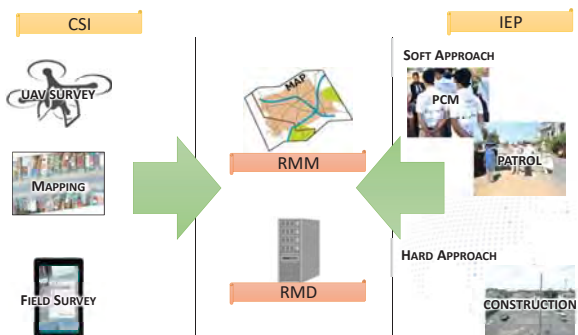
RMS



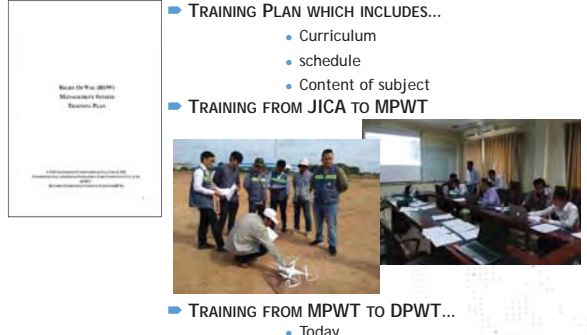
RMG



RMM & RMD



RMS-TP AND TRAINING

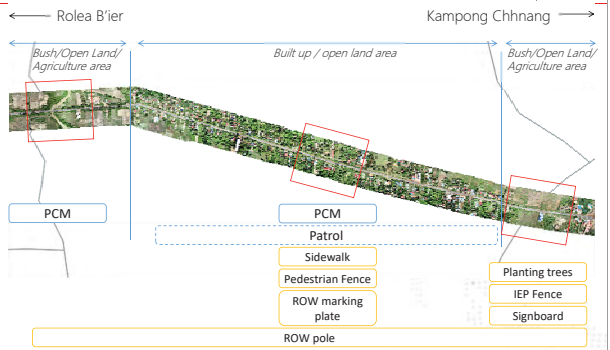


PILOT PROJECT



17

IEP TARGET AREA



CSI TARGET AREA



IEP WORK PROGRESS

		APRIL	MAY	JUNE	JULY	AUG	SEP
SOFT APPROACH	PCM 1	●					
	PCM 2						
HARD APPROACH	K/O MTG	●					
	Construction						



CSI WORK PROGRESS

PROGRESS CHART

- UAV Survey** 100%: 250 flights
- Image Processing** 100%: 36,600,000m²
- Data Production** 100%: 33625 points
- Field Survey** 100%: 25248 ground photos
- Data Finalization** 60%: correcting errors...

ROW MANAGEMENT MAP (RMM):
To Identify Encroachment into ROW on Map

ROW MANAGEMENT DATABASE (RMD):
To show Detailed Information of Encroachment
To count Encroachments for Classification

IEP TARGET AREA



THANK YOU! សូមអរគុណ



23

FIELD SURVEY FOR CSI (CURRENT STATUS IDENTIFICATION)

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

OUTLINE

2

GENERAL

- Current Status Identification (CSI) focuses on data collection related to situation of right of way along national roads and provincial roads across the country in order to creating right of way maps and database as baseline for effective right of way management.
- The purpose of CSI is to study on a current situation of ROW management and developing a ROW current situation map as a baseline so that appropriate measures can be applied for effective ROW management and encroachment prevention.
- The CSI work covers on all national roads under management of MPWT. A primary focus for the CSI is 1-digit national roads of which information is to be compiled on a ROW management map. After the completion of the map for the 1-digit national roads, 2-digit national roads will be targeted.

ORGANIZATION

Main contents of CSI are:

- 1) UAV survey,
- 2) data processing and
- 3) field survey, which is consisted data processing for Map and preparing survey sheet.

RID & DPWT should understand roles and collaborate with each organization to collect basic information through the surveys.

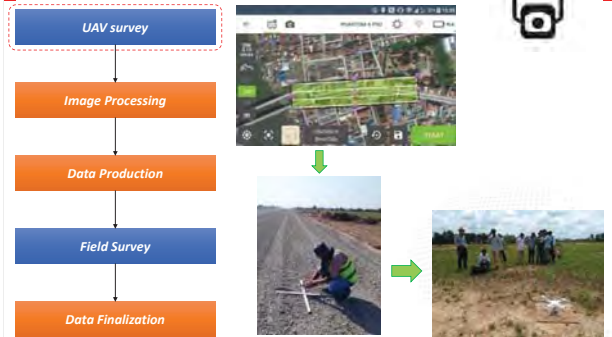
CSI WORK CONTENTS

Kick-off Meeting

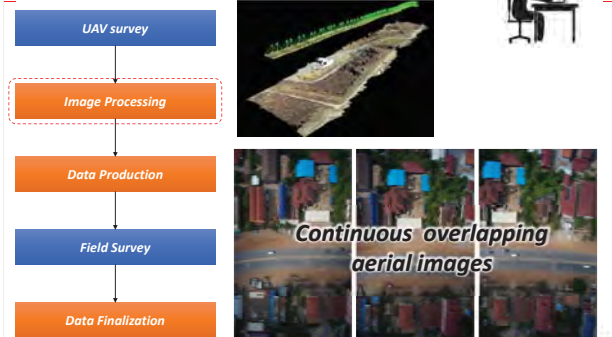
- To explain the work purpose, content and schedule to the local authorities.



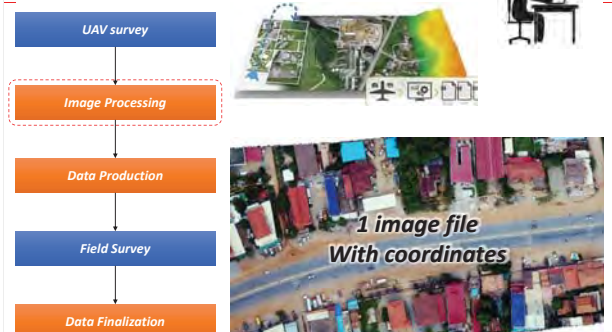
CSI WORK CONTENTS



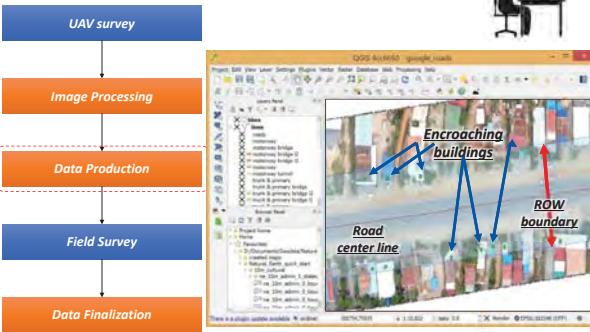
CSI WORK CONTENTS



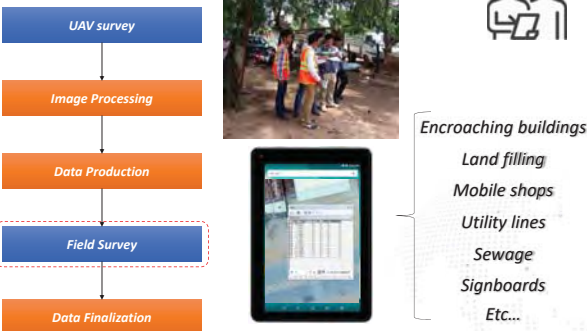
CSI WORK CONTENTS



CSI WORK CONTENTS



CSI WORK CONTENTS



CSI WORK CONTENTS



CSI ROLE

	ITEM	MPWT	DPWT	LOCAL AUTHORITY
KICKOFF MTG	Arrangement	✓	✓	
	Implementation	✓	✓	✓
	Flight permission	✓	✓	✓
UAV SURVEY	Flight plan	✓		
	UAV survey	✓	✓	
	Supervision (for outsourcing)	✓		Support
OFFICE WORK	Image processing	✓		
	Mapping (data production)	✓		
FIELD SURVEY	FS permission	✓	✓	✓
	Field survey	✓	✓	
	Supervision	✓		
GIS	data finalization	✓		

PREPARATION FOR FIELD SURVEY

PERMISSIONS - SAMPLE -

Request from
JICA project to MPWT

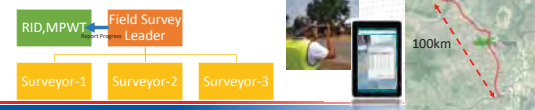
Request for
Drone survey from MPWT

Permission from
Provincial Office

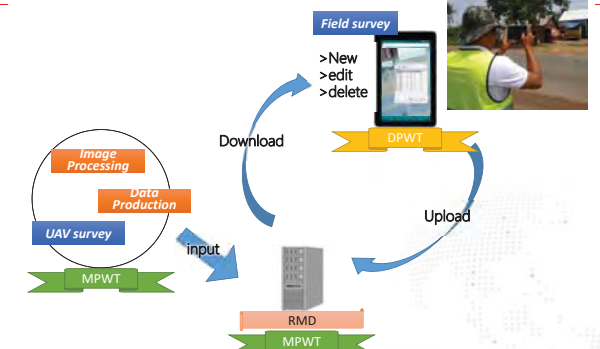
SURVEY TEAM ARRANGEMENT

About team arrangement for Field Survey, the assumption has been considered based on the result of pilot project.

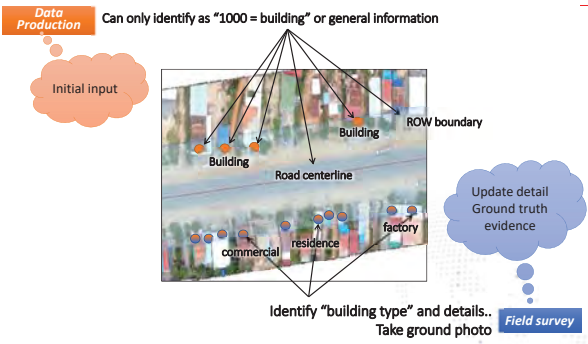
- Field Survey Leader: **1 person** will be assigned to manage Field Survey Team from MPWT or DPWT.
- Field Surveyors: **3 persons** for 1 team will be assigned to implement Field Survey from DPWT. The team could complete 100km within 3 months.
- Team arrangement could be considered depend on scale and priority of road improvement project.



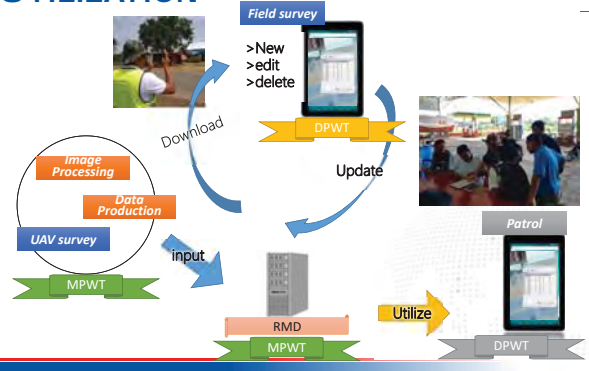
SYSTEM



CONCEPT



UTILIZATION



CSI DATA COLLECTION LIST

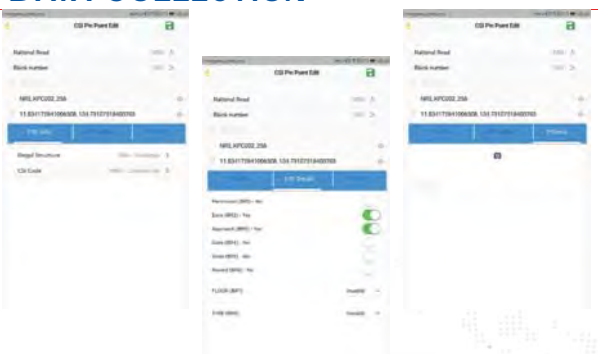
Data Production	Field Survey																																																																																																																																																										
<p>CSI point data code list</p> <table border="1"> <tr><td>1000</td><td>Building</td></tr> <tr><td>6000</td><td>City</td></tr> <tr><td>6100</td><td>1st digit NR</td></tr> <tr><td>6110</td><td>1st digit NR Bypass</td></tr> <tr><td>6200</td><td>2nd digit NR</td></tr> <tr><td>6210</td><td>2nd digit NR Bypass</td></tr> <tr><td>6300</td><td>3rd digit NR</td></tr> <tr><td>6310</td><td>3rd digit NR Bypass</td></tr> <tr><td>6999</td><td>Other</td></tr> <tr><td>8000</td><td>NO USE</td></tr> <tr><td>8001</td><td>Flight block</td></tr> <tr><td>8002</td><td>Station block</td></tr> <tr><td>8003</td><td>ROW boundary</td></tr> <tr><td>8004</td><td>CDI boundary</td></tr> <tr><td>8500</td><td>Commune boundary</td></tr> <tr><td>8510</td><td>Province boundary</td></tr> <tr><td>8511</td><td>International boundary</td></tr> <tr><td>8999</td><td>Other</td></tr> </table> <p>CSI line & area data code list</p> <table border="1"> <tr><td>1000</td><td>Residence</td></tr> <tr><td>1000</td><td>Residence/Commercial</td></tr> <tr><td>1000</td><td>Commercial</td></tr> <tr><td>1000</td><td>Shed</td></tr> <tr><td>1000</td><td>Temporary shop</td></tr> <tr><td>1000</td><td>Building under construction</td></tr> <tr><td>1000</td><td>Factory</td></tr> <tr><td>1000</td><td>Petro station</td></tr> <tr><td>1000</td><td>Public office</td></tr> <tr><td>1010</td><td>School public</td></tr> <tr><td>1010</td><td>School private</td></tr> <tr><td>1010</td><td>Pagoda</td></tr> <tr><td>1010</td><td>Health center</td></tr> <tr><td>1010</td><td>Mobile cart</td></tr> <tr><td>1999</td><td>Other</td></tr> <tr><td>2000</td><td>Approach to building</td></tr> <tr><td>2000</td><td>Access Road</td></tr> <tr><td>2000</td><td>Land filling</td></tr> <tr><td>2000</td><td>Open Area</td></tr> <tr><td>2000</td><td>Parking</td></tr> <tr><td>2999</td><td>Other</td></tr> <tr><td>3100</td><td>Signboard public</td></tr> <tr><td>3110</td><td>Signboard private</td></tr> <tr><td>3200</td><td>Street Light</td></tr> <tr><td>3300</td><td>Pylon L</td></tr> <tr><td>3310</td><td>Pylon R</td></tr> <tr><td>3400</td><td>Cemetery</td></tr> <tr><td>3500</td><td>Private drainage</td></tr> <tr><td>3600</td><td>Well</td></tr> <tr><td>3700</td><td>KM post</td></tr> <tr><td>3800</td><td>ROW pole</td></tr> <tr><td>3910</td><td>CP pole</td></tr> <tr><td>3990</td><td>Control point (GCP)</td></tr> <tr><td>3910</td><td>Benchmark (BM)</td></tr> <tr><td>3999</td><td>Other</td></tr> <tr><td>4000</td><td>Post in remarks</td></tr> <tr><td>4599</td><td>Other</td></tr> <tr><td>5000</td><td>PCM</td></tr> <tr><td>5100</td><td>CP hard approach</td></tr> <tr><td>5999</td><td>Post in remarks</td></tr> <tr><td>5999</td><td>Other</td></tr> </table>	1000	Building	6000	City	6100	1st digit NR	6110	1st digit NR Bypass	6200	2nd digit NR	6210	2nd digit NR Bypass	6300	3rd digit NR	6310	3rd digit NR Bypass	6999	Other	8000	NO USE	8001	Flight block	8002	Station block	8003	ROW boundary	8004	CDI boundary	8500	Commune boundary	8510	Province boundary	8511	International boundary	8999	Other	1000	Residence	1000	Residence/Commercial	1000	Commercial	1000	Shed	1000	Temporary shop	1000	Building under construction	1000	Factory	1000	Petro station	1000	Public office	1010	School public	1010	School private	1010	Pagoda	1010	Health center	1010	Mobile cart	1999	Other	2000	Approach to building	2000	Access Road	2000	Land filling	2000	Open Area	2000	Parking	2999	Other	3100	Signboard public	3110	Signboard private	3200	Street Light	3300	Pylon L	3310	Pylon R	3400	Cemetery	3500	Private drainage	3600	Well	3700	KM post	3800	ROW pole	3910	CP pole	3990	Control point (GCP)	3910	Benchmark (BM)	3999	Other	4000	Post in remarks	4599	Other	5000	PCM	5100	CP hard approach	5999	Post in remarks	5999	Other	<p>CSI point data code list</p> <table border="1"> <tr><td>1000</td><td>Building</td></tr> <tr><td>6000</td><td>City</td></tr> <tr><td>6100</td><td>1st digit NR</td></tr> <tr><td>6110</td><td>1st digit NR Bypass</td></tr> <tr><td>6200</td><td>2nd digit NR</td></tr> <tr><td>6210</td><td>2nd digit NR Bypass</td></tr> <tr><td>6300</td><td>3rd digit NR</td></tr> <tr><td>6310</td><td>3rd digit NR Bypass</td></tr> <tr><td>6999</td><td>Other</td></tr> <tr><td>8000</td><td>NO USE</td></tr> <tr><td>8001</td><td>Flight block</td></tr> <tr><td>8002</td><td>Station block</td></tr> <tr><td>8003</td><td>ROW boundary</td></tr> <tr><td>8004</td><td>CDI boundary</td></tr> <tr><td>8500</td><td>Commune boundary</td></tr> <tr><td>8510</td><td>Province boundary</td></tr> <tr><td>8511</td><td>International boundary</td></tr> <tr><td>8999</td><td>Other</td></tr> </table>	1000	Building	6000	City	6100	1st digit NR	6110	1st digit NR Bypass	6200	2nd digit NR	6210	2nd digit NR Bypass	6300	3rd digit NR	6310	3rd digit NR Bypass	6999	Other	8000	NO USE	8001	Flight block	8002	Station block	8003	ROW boundary	8004	CDI boundary	8500	Commune boundary	8510	Province boundary	8511	International boundary	8999	Other
1000	Building																																																																																																																																																										
6000	City																																																																																																																																																										
6100	1st digit NR																																																																																																																																																										
6110	1st digit NR Bypass																																																																																																																																																										
6200	2nd digit NR																																																																																																																																																										
6210	2nd digit NR Bypass																																																																																																																																																										
6300	3rd digit NR																																																																																																																																																										
6310	3rd digit NR Bypass																																																																																																																																																										
6999	Other																																																																																																																																																										
8000	NO USE																																																																																																																																																										
8001	Flight block																																																																																																																																																										
8002	Station block																																																																																																																																																										
8003	ROW boundary																																																																																																																																																										
8004	CDI boundary																																																																																																																																																										
8500	Commune boundary																																																																																																																																																										
8510	Province boundary																																																																																																																																																										
8511	International boundary																																																																																																																																																										
8999	Other																																																																																																																																																										
1000	Residence																																																																																																																																																										
1000	Residence/Commercial																																																																																																																																																										
1000	Commercial																																																																																																																																																										
1000	Shed																																																																																																																																																										
1000	Temporary shop																																																																																																																																																										
1000	Building under construction																																																																																																																																																										
1000	Factory																																																																																																																																																										
1000	Petro station																																																																																																																																																										
1000	Public office																																																																																																																																																										
1010	School public																																																																																																																																																										
1010	School private																																																																																																																																																										
1010	Pagoda																																																																																																																																																										
1010	Health center																																																																																																																																																										
1010	Mobile cart																																																																																																																																																										
1999	Other																																																																																																																																																										
2000	Approach to building																																																																																																																																																										
2000	Access Road																																																																																																																																																										
2000	Land filling																																																																																																																																																										
2000	Open Area																																																																																																																																																										
2000	Parking																																																																																																																																																										
2999	Other																																																																																																																																																										
3100	Signboard public																																																																																																																																																										
3110	Signboard private																																																																																																																																																										
3200	Street Light																																																																																																																																																										
3300	Pylon L																																																																																																																																																										
3310	Pylon R																																																																																																																																																										
3400	Cemetery																																																																																																																																																										
3500	Private drainage																																																																																																																																																										
3600	Well																																																																																																																																																										
3700	KM post																																																																																																																																																										
3800	ROW pole																																																																																																																																																										
3910	CP pole																																																																																																																																																										
3990	Control point (GCP)																																																																																																																																																										
3910	Benchmark (BM)																																																																																																																																																										
3999	Other																																																																																																																																																										
4000	Post in remarks																																																																																																																																																										
4599	Other																																																																																																																																																										
5000	PCM																																																																																																																																																										
5100	CP hard approach																																																																																																																																																										
5999	Post in remarks																																																																																																																																																										
5999	Other																																																																																																																																																										
1000	Building																																																																																																																																																										
6000	City																																																																																																																																																										
6100	1st digit NR																																																																																																																																																										
6110	1st digit NR Bypass																																																																																																																																																										
6200	2nd digit NR																																																																																																																																																										
6210	2nd digit NR Bypass																																																																																																																																																										
6300	3rd digit NR																																																																																																																																																										
6310	3rd digit NR Bypass																																																																																																																																																										
6999	Other																																																																																																																																																										
8000	NO USE																																																																																																																																																										
8001	Flight block																																																																																																																																																										
8002	Station block																																																																																																																																																										
8003	ROW boundary																																																																																																																																																										
8004	CDI boundary																																																																																																																																																										
8500	Commune boundary																																																																																																																																																										
8510	Province boundary																																																																																																																																																										
8511	International boundary																																																																																																																																																										
8999	Other																																																																																																																																																										

THANK YOU FOR YOUR ATTENTION!!

DATA COLLECTION



DATA COLLECTION



IEP (ILLEGAL ENCROACHMENT PREVENTION) APPROACHES

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

OUTLINE

2

APPROACH METHODS

5

SOFT & HARD APPROACH

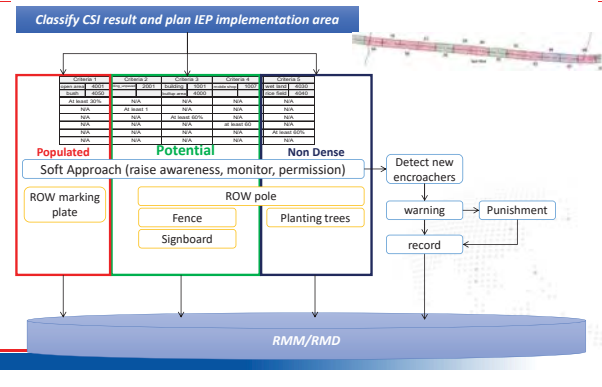
Hard Approach			Soft Approach			
New Road Design	Installing Facilities	Permission and Registration	Monitoring and Intervention	Raising awareness		
Constructing sub-road as ROW boundary	Digging channels as ROW boundary Pole Signboard Fence Growing Tree	ROW marking plate Access road permit	Appealing to the court ROW use permit	Regular patrol activities Collaborating with local authorities	Local governmental official High school and university students	Local people

GENERAL

- ROW management map is developed using the data collection activities from CSI. Based on densities of ROW encroachments pointed on the ROW map, ROW areas shall be classified into populated, potential and non-dense areas. IEP shall be implemented properly according to classification of areas on ROW management map in order not to allow any illegal or inappropriate land uses in ROW.
- IEP approaches aim to prevent new encroachment in the ROW and to regulate temporary use of ROW with permission so as to manage and maintain the land secured for road development.

IEP METHOD CLASSIFICATION

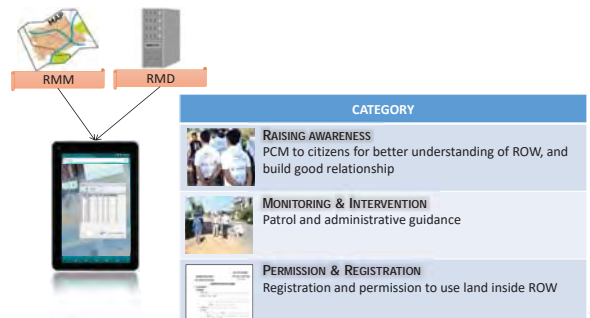
SOFT APPROACH
HARD APPROACH



ORGANIZATION

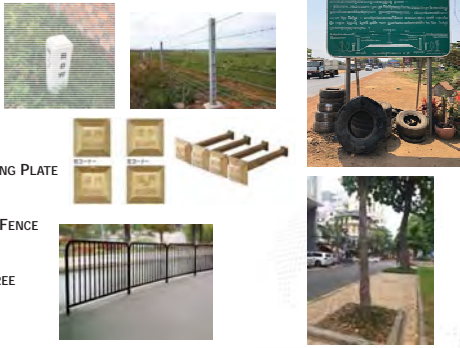
- According to Law on Road, MPWT is the road control authority in charge of construction, maintenance and management of all national roads in Cambodia. Also, Road Infrastructure Department (RID) of MPWT is a main actor in charge of ROW management of all national roads. Additionally, there are also other agencies/ministries involved in the ROW management such as Ministry of Interior, Ministry of Land Management, Urban Planning and Construction and Ministry of Education, Youth and Sport. MPWT is responsible for coordination, implementation, maintenance of the necessary records on the ROW and expenditure management and preparation of budgetary provisions.

IEP SOFT APPROACH



IEP HARD APPROACH

- 1. ROW POLE
- 2. IEP FENCE
- 3. SIGNBOARD
- 4. ROW MARKING PLATE
- 5. PEDESTRIAN FENCE
- 6. GROWING TREE

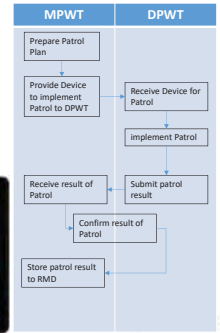


SOFT APPROACH-2

Monitoring and Intervention

MPWT and DPWT should collaborate to implement "Patrol" to collect the evidence from resident and to provide "Warning" for Illegal Encroachment.

- Patrol
- Administrative Guidance (To be Considered)



ROLES & PROCEDURES



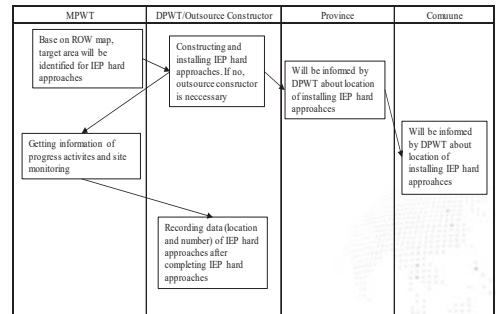
IEP HARD APPROACH ROLE

ITEM	MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification	✓				
Raise awareness (PCM)	1) Citizen	✓	✓		
	2) High school / University	✓			✓
	3) Local government office	✓	✓	✓	✓
Monitoring & intervention	1) Regular patrol	✓	✓	✓	
	2) Collaborating w/ local authorities		✓	✓	
	3) Appealing to court	✓	✓	✓	✓
Permission & Registration	1) ROW permit	✓	✓	✓	
	2) ROW registration	✓	✓	✓	✓
	3) Access road permit	✓	✓		✓
Supervision	1) Record of "raising awareness"	✓	✓		
	2) Record of "Monitoring"	✓	✓		
	3) Record of "Permission"	✓	✓		

IEP SOFT APPROACH ROLE

ITEM	MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification	✓				
Raise awareness (PCM)	1) Citizen	✓	✓		
	2) High school / University	✓			✓
	3) Local government office	✓	✓	✓	✓
Monitoring & intervention	1) Regular patrol	✓	✓	✓	
	2) Collaborating w/ local authorities		✓	✓	
	3) Appealing to court	✓	✓	✓	✓
Permission & Registration	1) ROW permit	✓	✓	✓	
	2) ROW registration	✓	✓	✓	✓
	3) Access road permit	✓	✓		✓
Supervision	1) Record of "raising awareness"	✓	✓		
	2) Record of "Monitoring"	✓	✓		
	3) Record of "Permission"	✓	✓		

HARD APPROACH

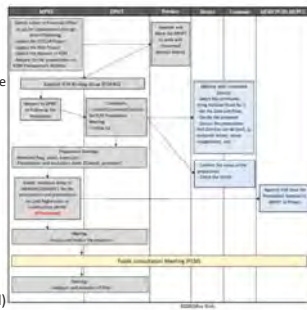


SOFT APPROACH-1

Raising awareness

Relevant organizations such as MPWT, DPWT and Local Authority should collaborate to provide "Consultation Meeting" to local people and relevant governments to ensure better understanding of ROW, and build good relationship

- Raising local people's awareness
- Raising relevant government officials' awareness
- Integrating ROW concept into school curriculum (To be Considered)



ផលវិជ្ជមាន និងផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

ផលវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

- កាត់បន្ថយការចំណាយរបស់ រដ្ឋាភិបាលទៅលើការដោះស្រាយផលប៉ះពាល់នៅពេលអភិវឌ្ឍផ្លូវ
- ងាយស្រួលក្នុងការអភិវឌ្ឍន៍បរិក្ខារផ្លូវផ្សេងៗដូចជា លូ ផ្លាកសញ្ញាពេចណ៍
- កាត់បន្ថយដំណោះដោះរដ្ឋ និងប្រជាពលរដ្ឋ
- កាត់បន្ថយគ្រោះថ្នាក់ចរាចរ (គ្មានអ្នករស់នៅក្បែរផ្លូវ, អ្នកបើកបរមើលឃើញស្ថានភាពផ្លូវច្បាស់)
- ធ្វើឱ្យផ្លូវប្រើប្រាស់បានយូរ មិនងាយខូច (ដោយសារមានគ្មានការបាក់ដីខ្ពស់ជាងផ្លូវមានប្រព័ន្ធរំលោភដីផ្លូវគ្រប់គ្រាន់)
- ផ្លូវមានសោភ័ណភាព

ផលវិជ្ជមាន និងផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

ផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

- រដ្ឋចំណាយច្រើនទៅលើការដោះស្រាយផលប៉ះពាល់ គម្រោងពង្រីកផ្លូវ
- ធ្វើឱ្យផ្លូវឆាប់ខូច (ដោយសារការរស់នៅជាប់ផ្លូវ, ចាក់ដីខ្ពស់ជាងផ្លូវ)
- រួមចំណែក បង្កគ្រោះថ្នាក់ចរាចរ ដោយសារការចូលមករស់នៅក្នុងដីចំណីផ្លូវជាឧបសគ្គធ្វើឱ្យអ្នកបើកបរមើលមិនច្បាស់
- ផ្លូវគ្មានសោភ័ណភាព

THANK YOU FOR YOUR ATTENTION!

អរគុណសម្រាប់ការយកចិត្តទុកដាក់ស្តាប់

ROW MANAGEMENT ACTIVITY AND PLAN

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

Contents

- Priority Activities
- Future Development Plan

Estimation Cost for ROW Management

Total length of all 1digit & 2digit National Road: 8,055km

<Priority Activities>

- CSI on the all 1digit & 2digit NR: USD 917,000
- PCM for 50 places: USD 100,000 for every year
- Patrol on all 1digit & 2digit NR: USD 73,000 for every year
- New ROW Pole on 1digit & 2digit NR (for 2,675km): USD 3,530,000
- Other Hard approaches is implemented in the national/international road project.

	1 st phase (1Y-3Y)	2 nd phase (4Y-6Y)	3 rd phase (7Y-9Y)
CSI	All 1digit & 2digit NR		Map update
PCM	50 places/year	50 places/year	50 places/year
Patrol	All 1digit & 2digit NR	All 1digit & 2digit NR	All 1digit & 2digit NR
ROW Pole	for 150km	for 600km	for 1,925km

First Phase Target for 3years

- CSI: Half of all 1digit & 2digit NR(3,472km): USD 462,000
- PCM for 50 places (2time in each province): USD 300,000
- Patrol on all 1digit & 2digit NR: USD 73,000
- New ROW Pole for 150km is installed: USD 198,000

Approaches	1 st year	2 nd year	3 rd year	3 years total	Remarks	
CSI	Progress	1,142km	1,142km	1,142km	3,427km	Half of 1 & 2 digit NR
	UAV	\$111,600	\$109,000	\$111,400	\$332,000	(Outsource) 38.9MM
	Office	\$35,300	\$4,400	\$4,400	\$44,100	90.3MM
	FS	\$30,200	\$25,900	\$30,200	\$86,300	321.7MM
	Total	\$177,000	\$139,000	\$146,000	\$462,000	
IEP	PCM	\$100,000	\$100,000	\$100,000	\$300,000	50 places / year
	Patrol	\$72,600	\$72,600	\$72,600	\$217,800	All 1 & 2 digit NR
	ROW Pole	\$66,000	\$66,000	\$66,000	\$198,000	For 150 km
Total	\$239,000	\$239,000	\$239,000	\$717,000		
Total	\$416,000	\$378,000	\$385,000	\$1,179,000		

PRIORITY ACTIVITIES

3

FUTURE DEVELOPMENT PLAN

7

Advantages of ROW Management

- Illegal occupation of state land makes implementation of resettlement procedure much more complicated and that management doesn't work effectively.
- And, resettlement cost will be higher in the future without adequate ROW management.
- Adequate ROW management can
 - Minimize the resettlement cost,
 - lead to smooth project implementation related to the road construction without delay of land issue.
- CSI and IEP activities contribute to prevent the illegal encroachment to the ROW on national road and to reduce the resettlement in the future.

Development Plan

- NR #1 Total Length 162.00Km
- NR #2 + 22 Total Length 120.00Km
- NR #4 Total Length 230.00Km
- NR #31+33+3 Total Length 150.00Km
- NR #8 Total Length 130.00Km
- NR #48 Total Length 150.00Km

Thank you!!!





Date: 31st July 2019

Time: 8:30am-16:00pm

Location: at SUNWAY Hotel, Phnom Penh at MPWT South Gate

Topic: The Workshop for Practice of ROW Management System

Attendance List

No	Name	Position	Department/Ministry	Phone
MPWT-RID				
1	Mr. Thou Samnang	Deputy Director General	General Directorate of Techniques, MPWT	
2	Mr. Khuon Kompheak	Deputy Director	RID/MPWT	
3	Mr. Chea Samnang	Chief of ROW Office	RID/MPWT	
4	Mr. Hay Chandara	Deputy Chief of ROW Office	RID/MPWT	
5	Mr. Khai Saray	Deputy Chief of ROW Office	RID/MPWT	
6	Mr. Sokun Piseth	Deputy Chief of Office	RID/MPWT	
7	Mr. Chak Borith	Chief Officer	RID/MPWT	
8	Mr. Kaing Theara	Officer	RID/MPWT	
9	Mr. Sao Premarak	Deputy Chief of Office	RID/MPWT	
10	Mr. Manh Vutha	Deputy Chief of Office	RID/MPWT	
11	Mr. Song Kimheng	Officer	RID/MPWT	
12	Mr. Sok Chandy	Officer	RID/MPWT	
13	Mr. Sour Keasithising	Officer	RID/MPWT	
MPWT-PID				
14	Ms. Eam Sokchea	Deputy Chief of Office	PID/MPWT	
15	Mr. Kong Youreth	Chief Officer	PID/MPWT	
16	Mr Oeng Kimhak	Deputy Chief Officer	PID/MPWT	
MPWT-ICD				
17	Ms. Oum Sokvasey	Chief Officer	ICD/MPWT	
18	Mr. Peang Samoeun	Chief Officer	ICD/MPWT	
DPWT-Kandal Province				
19	Mr. On Raksmeay	Deputy Director	DPWT	
20	Mr. Duong Vannak	Deputy Officer	DPWT	
DPWT-Battambang Province				

1



45	Mr. Penh Socheat	Technical Assistant	JICA Project Team	
46	Mr. Bun Sereyvuth	Project Assistant	JICA Project Team	
47	Mr. Mut Samon	Assistant	JICA Project Team	
48	Mr. Preah Loch	Assistant	JICA Project Team	

3



21	Mr. Eap Visoth	Deputy Director	DPWT	
22	Mr. San Sereisith	Chief Officer	DPWT	
DPWT-Banteay Meanchey Province				
23	Mr. Chea Dararith	Officer	DPWT	
24	Mr. Kim Sovannchhetra	Officer	DPWT	
25	Mr. Ou Smith	Officer	DPWT	
DPWT-Kampong Chhnang Province				
26	Mr. Chhay Leaphea	Deputy Director	DPWT	
27	Mr. Ieng Huo	Chief of Public Works Office	DPWT	
28	Mr. Khut Khemra	Officer	DPWT	
29	Mr. Leng Ratha	Officer	DPWT	
DPWT-Pursat Province				
30	Mr. Sy Sereyvath	Officer	DPWT	
31	Mr. Kang Kimchhun	Chief of Office	DPWT	
32	Mr. Bun Soupheng	Officer	DPWT	
Others				
33	Ms. Kheng Chanchoronay	Student (intern at MPWT)	ITC	
34	Ms. Sreang Sreymom	Student (intern at MPWT)	ITC	
35	Mr. Hean Kongheng	Student (intern at MPWT)	ITC	
Cam Info Service				
36	Mr. Sous Thidet	App developer	CIS	
37	Mr. Sun Socheat	App Developer	CIS	
38	Mr. Chek Sophal	App Developer	CIS	
JICA Project Team_CESCoR				
39	Dr. Tsuchida Takayuki	Team Leader	JICA Project Team	
40	Mr. Kumagai Takahiro	Project Coordinator	JICA Project Team	
41	Mr. Kiyota Daisaku		JICA Project Team	
42	Mr. James Kazumori WATSON		JICA Project Team	
43	Mr. Watanabe		JICA Project Team	
44	Ms. Ches Sophy	Project Assistant	JICA Project Team	

2



WORKSHOP FOR PRACTICE OF ROW MANAGEMENT SYSTEM

DISCUSSION MEMO

Date & Time :	August 29 th , 2019 from 8:30am to 4:00pm
Place	PHNOM PENH Hotel, Phnom Penh
Attendees :	H.E. Nou Vaddhanak, Under Secretary of State, MPWT Mr. Khoun Kompheak, Deputy Director, RID/MPWT Mr. Chea Samnang, Chief of ROW Office, RID/MPWT Mr. Hay Chandara, Deputy Chief of ROW Office, RID MPWT Mr. Sok Ly, Deputy Director, ICD/MPWT Ms. Eam Sokchea, Deputy Chief of Environment and Public Service Office, PID/MPWT And Other MPWT officials and DPWT officials from Kampong Cham, Kampong Thom, Siem Reap and Oddor Meanchey (see the attendant list in this memo)
Project Team :	Mr. Yamashita, Mr. Kumagai, Ms. Nomura, Ms. Sophy, Mr. Soheat, Mr. Luch, Mr. Sereyvuth and Mr. Samon
Agenda / Discussion Points :	- To train the DPWTs' Officials on ROW management System through the presentations from ROW TF members (MPWT's Officials); - To conduct the field practice for field survey and patrol.

1- Opening Remark by H.E. Nou Vaddhanak, Under Secretary of State, MPWT

2- Presentation on outline of ROW Management Methods by Mr. Chea Samnang

Comments, Questions and Answers:

- Question 1 from H.E. Nou Vaddhanak:

Thank you for your good presentation. For the drone flight, I understood that we submitted the letter to ask the permission. However, I have wondered if we have ever received the reply from the local authority?

- Answer 1 by Mr. Chea Samnang:

Mostly we received the reply and got the permission from local authorities orally. However, we did receive the official reply by letter from one local authority. We will show the letter in the next presentation.



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



- Comment 1 by H.E. Nou Vaddhanak:

From this project, we have studied to get experiences and knowledge as tool to implement the ROW Management in Future. However, who will implement the ROW management? We know that General Directorate of Public Works manages the Public Works and road construction but based on Prakas, only Road Infrastructure Department has ROW office. Importantly, we need to learn and upgrade the knowledge first; especially the DWPT officials. We need to modify the role to implement the ROW management; although the budget for ROW is under the General Directorate of Public Works.

- Comment 2 by H.E. Nou Vaddhanak:

I would like to kindly remind the DPWT officials that based on the Sub-decree, some provincial roads had been upgraded to National Road 2-digits. Therefore, the ROW is 25m from the central line both sides. Regarding this, we should have data on original central line (GPS) because some roads have been expanded only one side; then without original or existing central line, people will confuse and it causes the trouble during the resettlement. To solve these problems, we need to register the ROW with the Hard Title.

- Question 2 from Siem Reap DPWT:

Thank you for your good presentation. I have understood that this project has studied the National Road No.5. It would be great if the project can continue to National Road No.6. On another hand, I would like to ask the question on ROW Management. How do we define the ROW in urban area? We don't have data on the boundary between the urban and non-urban areas.

- Answer 2 by Mr. Chea Samnang:

This project will finish at the end of this year. There is no extension to another National Road. However, DPWT can request for the National Budget to implement the ROW Management. MPWT can support because we have ideas. For the definition of non-urban areas, we also do not know.

- Added by H.E. Nou Vaddhanak:

MPWT submitted letters to Ministry of Interior (MoI) and Ministry of Land Management, Urban Planning and Construction to give us the clear definition and boundary between urban and non-urban areas. However, until now we have not yet received any clear answer. We cannot stop the expansion of urban areas. Therefore, in order to prevent the illegal encroachment, we need to apply our own mechanism. Our solution is to install the ROW poles at the rural areas first before the urban areas get expanded. We hope that installing ROW poles can prevent the encroachment. Gov't have spent a lot of money on Resettlement. In some cases, Gov't decided to build the Bypass



because the resettlement cost is too high. During the ROW Pole installation, we need to take photos as evidence; when people encroach the ROW, we can use the photos as evidence to show them.

- Question 3 from H.E. Nou Vaddhanak:

Regarding the IEP at Chrey Bak. I want to know whether there is the side drainage and outlet or not.

- Answer 3 by Mr. Chea Samnang:

We are going to build the side drainage and use the existing outlet.

- Comment 3 by H.E. Nou Vaddhanak:

We need to consider about the outlet even we have drainage. If we do not have outlet, we need to dig the pond or reservoir to store water from drainage. Regarding this matter, I would like to request that with the road distance of 1km or 2km, there should be one outlet or reservoir to store water released from the roads. Also, we need to encourage and explain the people not to fill land with higher elevation than the roads' elevation.

3- Presentation on Field Survey for Current Status Identification (CSI) by Mr. Khoun Kompheak:

Comments, Questions and Answers:

- Question 1 from H.E. Nou Vaddhanak:

Thank you for your good presentation. I would like to know whether photos taken by drone on the map have correct GPS or not. Can we open it like Avenza and it will show us the exact location at the field? And each photo has the summarized information or not if we click on that Pin Point?

- Answer 1 by Mr. Kompheak:

Yes, we can open it like Avenza with the location. It might be a bit bias of the location; however, we can find the exact location. Each Pin Point or photo has the data or information.

- Comment 1 by H.E. Nou Vaddhanak:

Based on the photo shown in the presentation, I think it is the urban areas because it is very crowded. Then, I do not think it is correct to offset the ROW 30m both sides.

- Question 2 from Siem Reap DPWT:

What kind of drone did you use? How did you set the height for flight and GCP?



- Answer 2 by Mr. Kompheak:

We used the Phantom 4 Drone. The height for the flight was 100m. We did check the wind condition with wind meter. For the GCP we set by using handy GPS. In order to avoid the error, we overlapped the photos for 80% with the angle of 90 degree.

- Comment 2 by H.E. Nou Vaddhanak:

This CSI and database are like the inventory source. We can use this data for other purposes (not only for ROW). We can use it to count the bridges, make drawing, or design the location for traffic safety, etc. Therefore, DPWTs' officials need to learn from this workshop. Although it is just the pilot project, we need to update ourselves. We can use the National Budget to implement these activities by ourselves.

4- Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches by Mr. Kaing Theara:

Comments, Questions and Answers:

- Comment 1 by H.E. Nou Vaddhanak:

For the Monitoring and Patrol, can we do it by flying the drone to capture the visual image? We keep those photos as evidences. We can fly the drone again after 1 or 2years to compare. If we find the encroachment, we can go to that place directly.

- Comment 2 by H.E. Nou Vaddhanak:

For the permission on ROW usage based on Article No. 36 in Road Law, the procedure to use ROW is set by Joint Prakas between Ministry of Public Works and Transport and Ministry of Rural Development. However, so far, we have not yet prepared this Joint Prakas. Can we (General Directorate of Public Works or our ROW TF members) do anything on this administrative works? We need to develop technical typical standard drawing (Cross section) on road utilities with detailed design then others (DPWTs and Private Construction Company) can learn.

- Comment 3 by H.E. Nou Vaddhanak:

In Thailand, they construct the road from the edge of ROW. But for us, due to limited budget, we build the road from the middle space. Then, the free space has been encroached; so, it is difficult to solve and manage ROW. However, we have to make sure that those encroaching structures are just the soft or temporary structures.



5- Presentation on ROW Management Activity and Plan by Mr. Hay Chandara:

Comments, Questions and Answers:

- Comment by H.E. Nou Vaddhanak:

For the last slide, the length of National Road No.1 is 162km from Kbal Thnol to Bavet only. The full length of National Road No.1 (168km) is from Wat Phnom. So, please add the clear note for this. Same thing goes for the National Road No. 48.



6- Closing Remark by H.E. Nou Vaddhanak

****Afternoon session:**

1- Comprehensive Test:

2- Presentation on Implementation of Field Survey (CSI) and Patrol (IEP) by JICA Team (Mr. Bun SereyVuth):

Question and Answer:

- **Q1 from DPWT:** in the Tablet, there are 1st Patrol, 2nd Patrol, etc. Can we check the history of our patrol?

- **A1:** Yes, we can check the history of previous patrol. This App can work offline at the site. Data will be automatically updated with internet connection. For each patrol, we can record and take photos up to 3 photos.



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



- **Q2 from DPWT:** You said each function can take photos up to 3 times, but actually for IEP function, only one photo can be taken. CSI can do it up to 3 photos.
- **A2:** Thank you for your comment. We will check and consider about it. Actually, because of the limited database space, we limit the number of photos.

- **Q3 from DPWT:** For the function on Next Patrol, why the options are only up to 30 days? How about more than 30 days?
- **A3:** 1st, DPWT can request to MPWT to change the date or add more function. 2nd: you can take note on the paper, take photo; then upload in the Tablet.

- **Q4 from DPWT:** Why there is no Khmer Version?
- **A4:** Yes, we will have Khmer Version. Now, we have only English version for testing and asking for any comment for improvement.

- **Q5 from MPWT-ICD:** For Next Patrol, can the App Sort the date for the Next Patrol? For Example, next patrol on the same date, we will have 5 locations to go, Can the App show those 5 locations?
- **A5:** That is good idea. We will discuss with our ROW TF members and JICA team on this matter.

- **Q6 from DPWT:** Can the App summarize the patrol as report? Can we know the length of encroachment (from central line) from the App?
- **A6:** If DPWT has the form as report, you can share us. Then, we will consider about this in the App. We have set all the information such as Name of structure's owner, type of structure, patrol date, but didn't think of the length of encroachment from central line or from COI.

- **Q7 from DPWT:** There are format for Patrol 1 and Patrol 2, how about the Patrol 3 and 4?
- **A7:** The format of Patrol 3 and Patrol 4 are same as Patrol 1 and 2. We have not yet finished developing the App. This workshop is to share the information and ask for the comment.

- **Q8 from DPWT:** For Patrol information, can we add more people of patrol group such as local authority?
- **A8:** Actually, we have another form to record the surveyor names, date and interviewee. You can take photo from that form and upload to App as evidence. There is a form in App and another form on Paper. Sometimes, it is difficult to input the data in App, so you can input on the paper, take the photo and upload to the App.



3- Practice for Field Survey and Patrol at Phnom Penh Hotel:

Demonstration by DPWTs' officials on using the Tablet:



- **Comments from App user:** App is easy to use but I think in reality, local people don't cooperate well because they are busy with their business. They just say that they will move out when gov't needs the land.

- **Replies from Mr. Samnang:** I know it is difficult to deal with local people. We need the art of speaking. We should not say directly to them that they encroach the ROW but it is better telling them that we come to collect the information on ROW usage. Before we go to meet the people, we need to inform the authority first.

If during the patrol, you find the construction is on-going. Sure, you can ask them if they already got the permission. If no permission, you can explain and ask them to stop the construction. Or take further action to report to local authority.

- **Comments from App user:** Has the project applied this App on National Road No.5?

- **Replies from JICA Team:** For CSI, from the beginning we used only paper with Tablet to take photo. Then, we used Avanza. That's why we have workshop to transfer the knowledge and to get comment to update the App.

- **Comments from Mr. Samnang:** The demo we did mainly focused on IEP. For CSI, there is no interview. But we have permission to take photo of building and fly the drone.



WORKSHOP FOR PRACTICE OF ROW MANAGEMENT SYSTEM

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

29TH AUGUST, 2019

PHNOM PENH HOTEL, PHNOM PENH



FOR MORE INFORMATION CONTACT: OFFICE +855(0)61-960-213

AGENDA

Workshop for Practice of ROW Management System The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

PHNOM PENH Hotel, Phnom Penh, 29th August 2019

Target Participants: DPWTs in Kampong Cham, Kampong Thom, Siem Reap, Oddor Meanchey and Preah Vihear

Time	Program	Content
08:30-08:45	Registration	
08:45-08:50	Cambodian National Anthem	
08:50-08:55	Opening Remarks H.E. NOU Vaddhanak, Under Secretary of State, MPWT	
08:55-09:25	Presentation on Outline for ROW Management Methods Mr. CHEA Samnang, Office Chief of ROW, RID, MPWT	1. Legal Framework, 2. Structure of CSI (RMD, RMM, UAV and Field survey), 3. Structure of IEP (Hard and Soft Approaches)
09:25-10:10	Presentation on Field Survey for Current Status Identification (CSI) Mr. KHOUN Kompheak, Deputy Director of RID, MPWT	1. Outline of Field Survey 2. Detailed Procedure for Field survey 3. Data collection and utilization by survey result (data analysis)
10:10-10:25	Coffee Break	
10:25-11:10	Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches Mr. KAING Theara, Official, RID, MPWT	1. Type of IEP approaches (Soft and Hard approach including typical cross section for future development) 2. Procedure for Soft Approaches such as Conduct PCM, Patrol and Provide ROW usage permission
11:10-11:40	Presentation on ROW Management Activity and Plan Mr. HAY Chandara, Deputy Office Chief of ROW, RID, MPWT	1. Priority Activities (CSI, PCM and ROW Pole Installation) 2. Future Development Plan
11:40-11:55	Q&A Session	
11:55-12:00	Closing Remarks H.E. NOU Vaddhanak, Under Secretary of State, MPWT	
12:00-13:30	Luncheon	
13:30-14:00	Comprehension Test for Participants	
14:00-14:30	Presentation on Implementation of Field Survey (CSI) and Patrol (IEP) JICA Project Team	1. Procedures for Field Survey 2. Procedures for Patrol 3. How to use Tablet App for Field survey and Patrol
14:30-15:00	Result of Comprehension Test	
15:00-16:30	Field Practice for Field Survey and Patrol at PHNOM PENH Hotel, JICA Project Team	

Note: All Presentations will be English, verbal speech in Khmer



WORKSHOP FOR PRACTICE OF ROW MANAGEMENT SYSTEM

DISCUSSION MEMO

Date & Time:	August 29 th , 2019 from 8:30am to 4:00pm
Place	PHNOM PENH Hotel, Phnom Penh
Attendees:	H.E. Nou Vaddhanak, Under Secretary of State, MPWT Mr. Khoun Kompheak, Deputy Director, RID/MPWT Mr. Chea Samnang, Chief of ROW Office, RID/MPWT Mr. Hay Chandara, Deputy Chief of ROW Office, RID MPWT Mr. Sok Ly, Deputy Director, ICD/MPWT Ms. Eam Sokchea, Deputy Chief of Environment and Public Service Office, PID/MPWT And Other MPWT officials and DPWT officials from Kampong Cham, Kampong Thom, Siem Reap and Oddor Meanchey (see the attendant list in this memo)
Project Team:	Mr. Yamashita, Mr. Kumagai, Ms. Nomura, Ms. Sophy, Mr. Soheat, Mr. Luch, Mr. Sereyvuth and Mr. Samon
Agenda / Discussion Points:	- To train the DPWTs' Officials on ROW management System through the presentations from ROW TF members (MPWT's Officials); - To conduct the field practice for field survey and patrol.

1- Opening Remark by H.E. Nou Vaddhanak, Under Secretary of State, MPWT

2- Presentation on outline of ROW Management Methods by Mr. Chea Samnang

Comments, Questions and Answers:

- Question 1 from H.E. Nou Vaddhanak:

Thank you for your good presentation. For the drone flight, I understood that we submitted the letter to ask the permission. However, I have wondered if we have ever received the reply from the local authority?

- Answer 1 by Mr. Chea Samnang:

Mostly we received the reply and got the permission from local authorities orally. However, we did receive the official reply by letter from one local authority. We will show the letter in the next presentation.



- Comment 1 by H.E. Nou Vaddhanak:

From this project, we have studied to get experiences and knowledge as tool to implement the ROW Management in Future. However, who will implement the ROW management? We know that General Directorate of Public Works manages the Public Works and road construction but based on Prakas, only Road Infrastructure Department has ROW office. Importantly, we need to learn and upgrade the knowledge first; especially the DWPT officials. We need to modify the role to implement the ROW management; although the budget for ROW is under the General Directorate of Public Works.

- Comment 2 by H.E. Nou Vaddhanak:

I would like to kindly remind the DPWT officials that based on the Sub-decree, some provincial roads had been upgraded to National Road 2-digits. Therefore, the ROW is 25m from the central line both sides. Regarding this, we should have data on original central line (GPS) because some roads have been expanded only one side; then without original or existing central line, people will confuse and it causes the trouble during the resettlement. To solve these problems, we need to register the ROW with the Hard Title.

- Question 2 from Siem Reap DPWT:

Thank you for your good presentation. I have understood that this project has studied the National Road No.5. It would be great if the project can continue to National Road No.6. On another hand, I would like to ask the question on ROW Management. How do we define the ROW in urban area? We don't have data on the boundary between the urban and non-urban areas.

- Answer 2 by Mr. Chea Samnang:

This project will finish at the end of this year. There is no extension to another National Road. However, DPWT can request for the National Budget to implement the ROW Management. MPWT can support because we have ideas. For the definition of non-urban areas, we also do not know.

- Added by H.E. Nou Vaddhanak:

MPWT submitted letters to Ministry of Interior (MoI) and Ministry of Land Management, Urban Planning and Construction to give us the clear definition and boundary between urban and non-urban areas. However, until now we have not yet received any clear answer. We cannot stop the expansion of urban areas. Therefore, in order to prevent the illegal encroachment, we need to apply our own mechanism. Our solution is to install the ROW poles at the rural areas first before the urban areas get expanded. We hope that installing ROW poles can prevent the encroachment. Gov't have spent a lot of money on Resettlement. In some cases, Gov't decided to build the Bypass because the resettlement



cost is too high. During the ROW Pole installation, we need to take photos as evidence; when people encroach the ROW, we can use the photos as evidence to show them.

- Question 3 from H.E. Nou Vaddhanak:

Regarding the IEP at Chrey Bak. I want to know whether there is the side drainage and outlet or not.

- Answer 3 by Mr. Chea Samnang:

We are going to build the side drainage and use the existing outlet.

- Comment 3 by H.E. Nou Vaddhanak:

We need to consider about the outlet even we have drainage. If we do not have outlet, we need to dig the pond or reservoir to store water from drainage. Regarding this matter, I would like to request that with the road distance of 1km or 2km, there should be one outlet or reservoir to store water released from the roads. Also, we need to encourage and explain the people not to fill land with higher elevation than the roads' elevation.

3- Presentation on Field Survey for Current Status Identification (CSI) by Mr. Khoun Kompheak:

Comments, Questions and Answers:

- Question 1 from H.E. Nou Vaddhanak:

Thank you for your good presentation. I would like to know whether photos taken by drone on the map have correct GPS or not. Can we open it like Avenza and it will show us the exact location at the field? And each photo has the summarized information or not if we click on that Pin Point?

- Answer 1 by Mr. Kompheak:

Yes, we can open it like Avenza with the location. It might be a bit bias of the location; however, we can find the exact location. Each Pin Point or photo has the data or information.

- Comment 1 by H.E. Nou Vaddhanak:

Based on the photo shown in the presentation, I think it is the urban areas because it is very crowded. Then, I do not think it is correct to offset the ROW 30m both sides.

- Question 2 from Siem Reap DPWT:

What kind of drone did you use? How did you set the height for flight and GCP?



- Answer 2 by Mr. Kompheak:

We used the Phantom 4 Drone. The height for the flight was 100m. We did check the wind condition with wind meter. For the GCP we set by using handy GPS. In order to avoid the error, we overlapped the photos for 80% with the angle of 90 degree.

- Comment 2 by H.E. Nou Vaddhanak:

This CSI and database are like the inventory source. We can use this data for other purposes (not only for ROW). We can use it to count the bridges, make drawing, or design the location for traffic safety, etc. Therefore, DPWTs’ officials need to learn from this workshop. Although it is just the pilot project, we need to update ourselves. We can use the National Budget to implement these activities by ourselves.

4- Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches by Mr. Kaing Theara:

Comments, Questions and Answers:

- Comment 1 by H.E. Nou Vaddhanak:

For the Monitoring and Patrol, can we do it by flying the drone to capture the visual image? We keep those photos as evidences. We can fly the drone again after 1 or 2years to compare. If we find the encroachment, we can go to that place directly.

- Comment 2 by H.E. Nou Vaddhanak:

For the permission on ROW usage based on Article No. 36 in Road Law, the procedure to use ROW is set by Joint Prakas between Ministry of Public Works and Transport and Ministry of Rural Development. However, so far, we have not yet prepared this Joint Prakas. Can we (General Directorate of Public Works or our ROW TF members) do anything on this administrative works? We need to develop technical typical standard drawing (Cross section) on road utilities with detailed design then others (DPWTs and Private Construction Company) can learn.

- Comment 3 by H.E. Nou Vaddhanak:

In Thailand, they construct the road from the edge of ROW. But for us, due to limited budget, we build the road from the middle space. Then, the free space has been encroached; so, it is difficult to solve and manage ROW. However, we have to make sure that those encroaching structures are just the soft or temporary structures.



5- Presentation on ROW Management Activity and Plan by Mr. Hay Chandara:

Comments, Questions and Answers:

- Comment by H.E. Nou Vaddhanak:

For the last slide, the length of National Road No.1 is 162km from Kbal Thnol to Bavet only. The full length of National Road No.1 (168km) is from Wat Phnom. So, please add the clear note for this. Same thing goes for the National Road No. 48.



6- Closing Remark by H.E. Nou Vaddhanak

****Afternoon session:**

1- Comprehensive Test:

2- Presentation on Implementation of Field Survey (CSI) and Patrol (IEP) by JICA Team (Mr. Bun SereyVuth):

Question and Answer:

- **Q1 from DPWT:** in the Tablet, there are 1st Patrol, 2nd Patrol, etc. Can we check the history of our patrol?

- **A1:** Yes, we can check the history of previous patrol. This App can work offline at the site. Data will be automatically updated with internet connection. For each patrol, we can record and take photos up to 3 photos.



- **Q2 from DPWT:** You said each function can take photos up to 3 times, but actually for IEP function, only one photo can be taken. CSI can do it up to 3 photos.

- **A2:** Thank you for your comment. We will check and consider about it. Actually, because of the limited database space, we limit the number of photos.

- **Q3 from DPWT:** For the function on Next Patrol, why the options are only up to 30 days? How about more than 30 days?

- **A3:** 1st, DPWT can request to MPWT to change the date or add more function. 2nd: you can take note on the paper, take photo; then upload in the Tablet.

- **Q4 from DPWT:** Why there is no Khmer Version?

- **A4:** Yes, we will have Khmer Version. Now, we have only English version for testing and asking for any comment for improvement.

- **Q5 from MPWT-ICD:** For Next Patrol, can the App Sort the date for the Next Patrol? For Example, next patrol on the same date, we will have 5 locations to go, Can the App show those 5 locations?

- **A5:** That is good idea. We will discuss with our ROW TF members and JICA team on this matter.

- **Q6 from DPWT:** Can the App summarize the patrol as report? Can we know the length of encroachment (from central line) from the App?

- **A6:** If DPWT has the form as report, you can share us. Then, we will consider about this in the App. We have set all the information such as Name of structure's owner, type of structure, patrol date, but didn't think of the length of encroachment from central line or from COI.

- **Q7 from DPWT:** There are format for Patrol 1 and Patrol 2, how about the Patrol 3 and 4?

- **A7:** The format of Patrol 3 and Patrol 4 are same as Patrol 1 and 2. We have not yet finished developing the App. This workshop is to share the information and ask for the comment.

- **Q8 from DPWT:** For Patrol information, can we add more people of patrol group such as local authority?

- **A8:** Actually, we have another form to record the surveyor names, date and interviewee. You can take photo from that form and upload to App as evidence. There is a form in App and another form on Paper. Sometimes, it is difficult to input the data in App, so you can input on the paper, take the photo and upload to the App.

3- Practice for Field Survey and Patrol at Phnom Penh Hotel:



Demonstration by DPWTs’ officials on using the Tablet:



- **Comments from App user:** App is easy to use but I think in reality, local people don’t cooperate well because they are busy with their business. They just say that they will move out when gov’t needs the land.

- **Replies from Mr. Samnang:** I know it is difficult to deal with local people. We need the art of speaking. We should not say directly to them that they encroach the ROW but it is better telling them that we come to collect the information on ROW usage. Before we go to meet the people, we need to inform the authority first.

If during the patrol, you find the construction is on-going. Sure, you can ask them if they already got the permission. If no permission, you can explain and ask them to stop the construction. Or take further action to report to local authority.

- **Comments from App user:** Has the project applied this App on National Road No.5?

- **Replies from JICA Team:** For CSI, from the beginning we used only paper with Tablet to take photo. Then, we used Avanza. That’s why we have workshop to transfer the knowledge and to get comment to update the App.

- **Comments from Mr. Samnang:** The demo we did mainly focused on IEP. For CSI, there is no interview. But we have permission to take photo of building and fly the drone.



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



Date: 29th August 2019

Time: 8:30am-16:00pm

Location: at Phnom Penh Hotel

Topic: The Workshop for Practice of ROW Management System

Attendance List

No	Name	Position	Department/Ministry	Phone
MPWT-RID				
1	H.E. Nou Vaddhanak	Under Secretary of State	MPWT	
2	Mr. Khuon Kompheak	Deputy Director	RID/MPWT	
3	Mr. Chea Samnang	Chief of ROW Office	RID/MPWT	
4	Mr. Hay Chandara	Deputy Chief of ROW Office	RID/MPWT	
5	Mr. Khai Saray	Deputy Chief of ROW Office	RID/MPWT	
6	Mr. Sokun Piseth	Deputy Chief of Office	RID/MPWT	
7	Mr. Kaing Theara	Officer	RID/MPWT	
8	Mr. Nob Keilarith	Deputy Chief of Office	RID/MPWT	
9	Mr. Sao Premarak	Deputy Chief of Office	RID/MPWT	
10	Ms. Chhai Chariya	Deputy Chief of Office	RID/MPWT	
11	Ms. Thou Saovary	Deputy Chief of Office	RID/MPWT	
MPWT-PID				
12	Mr. Kong Youreth	Chief Officer	PID/MPWT	
13	Mr. Phat Vanthy	Chief Officer	PID/MPWT	
14	Ms. Eam Sokchea	Deputy Chief of Office	PID/MPWT	
MPWT-ICD				
15	Mr. Sok Ly	Deputy Director	ICD/MPWT	
16	Mr. Peang Samoeun	Chief Officer	ICD/MPWT	
17	Ms. Oum Sokvasey	Chief Officer	ICD/MPWT	
18	Mr. An Menghour	Officer	ICD/MPWT	
DPWT-Kampong Cham Province				
19	Mr. Sao Pharith	Chief of Public Works Office	MPWT	



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



20	Mr. Sen Sopheak	Deputy Chief of Technical Office	MPWT	
21	Mr. Chea Sovan	Deputy Chief of Technical Office	MPWT	
DPWT-Kampong Thom Province				
22	Mr. Houy Pouthearith	Deputy Chief of Technical Office	DPWT	
23	Mr. Kouern Molika	Officer	DPWT	
24	Mr. Heng Karona	Officer	DPWT	
DPWT-Siem Reap Province				
25	Mr. Tan Kimang	Chief of Order Office	DPWT	
26	Mr. Nhel Poutnin	Officer of Order Office	DPWT	
DPWT-Oddar Meanchey Province				
27	Mr. Hoeun Sengtin	Officer	DPWT	
28	Mr. Jen Ranakroth	Officer	DPWT	
29	Mr. Louem Raksmeay	Chief Officer	DPWT	
30	Mr. Kouy Vibol	Officer	DPWT	
Others				
31	Ms. Lim Sopokhem	Assistant Professor	Waseda University	
JICA Project Team_CESCoR				
32	Mr. Akira Yamashita	Team Leader	JICA Project Team	
33	Mr. Kumagai Takahiro	Project Coordinator	JICA Project Team	
34	Ms. Sakiko Nomura	Intern	JICA Project Team	
35	Ms. Ches Sophy	Project Assistant	JICA Project Team	
36	Mr. Penh Socheat	Technical Assistant	JICA Project Team	
37	Mr. Bun Sereyvuth	Project Assistant	JICA Project Team	
38	Mr. Mut Samon	Assistant	JICA Project Team	
39	Mr. Preah Loch	Assistant	JICA Project Team	

CESCOr PROJECT INTRODUCTION

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

Table of Contents

- CESCOr Project Introduction
- ROW Management
- Pilot Project

CESCOr PROJECT INTRODUCTION

PROJECT OUTPUTS

Project Period:

The project has been funded from JICA committed for the period from Jan. 2017 to Dec. 2019.

Project Goal:

Environmental and Social Consideration (ESC) in road sector is implemented properly by MPWT.

Project Purpose:

Capacity of MPWT officials on ESC is enhanced through applying Road Environmental Guidelines (REG) and Road Management System (RMS).

PROJECT OUTLINE

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

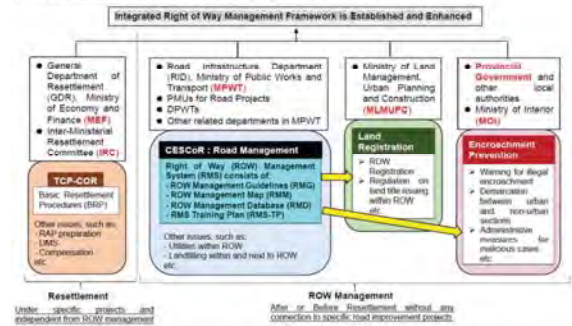
Note: REG: Road Environment Guideline, RMS: ROW Management System, EIA: Environmental Impact Assessment, EMP: Environmental Management Plan

OUTLINE

Output 3:	Implementation framework of SC related to ROW management is strengthened by establishing RMS
PURPOSE:	Capacity of Social Considerations (SC) required for ROW management is strengthened as a component of CESCOr Project, funded by JICA
ACTIVITY:	<ol style="list-style-type: none"> 1) Create RMG (ROW Management Guideline) 2) Create RMM/RMD as a result of Pilot Project 3) Create RMS-TP and Capacity building training to MPWT and DPWT
METHOD:	Specify a area to implement a pilot project to study the feasibility of the system. The system will be applied to NR5 has been selected for the rapid development. Target Area along National Road No.5 in four Provinces:
TARGET AREA:	<ol style="list-style-type: none"> 1) KAMPONG CHHNANG Province 2) PURSAT Province 3) BATTAMBANG Province 4) BANTEAY MEANCHHEY Province

INTEGRATED ROW MANAGEMENT FRAMEWORK

Chart: ROW Management and Target Area of CESCOr (including activities on EIA and EMP)



ROW MANAGEMENT

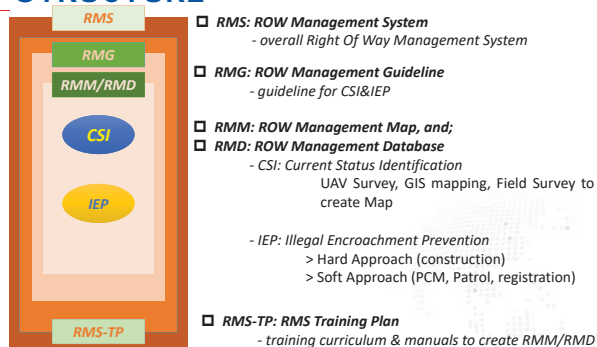
LEGAL FRAMEWORK FOR RIGHT OF WAY(ROW)

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

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)	
2-digits Number National Roads		25 m(※3)	25 m(※3)
Provincial roads		20 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

STRUCTURE



CSI ROLE

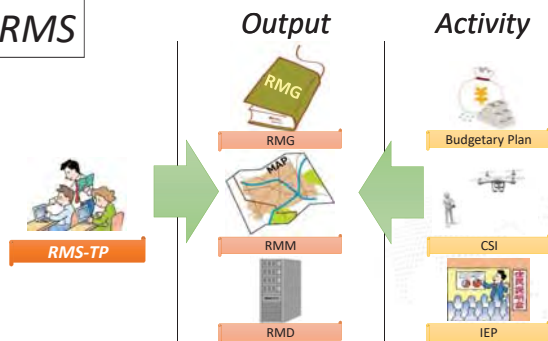
ITEM		MPWT	DPWT	LOCAL AUTHORITY
KICKOFF MTG	Arrangement	✓	✓	
	Implementation	✓	✓	✓
	Flight permission	✓	✓	✓
UAV SURVEY	Flight plan	✓		
	UAV survey	✓	✓	
	Supervision (for outsourcing)	✓		
OFFICE WORK	Image processing	✓		
	Mapping (data production)	✓		
FIELD SURVEY	FS permission	✓	✓	✓
	Field survey	✓	✓	
	Supervision	✓		
GIS	data finalization	✓		

IEP ROLE

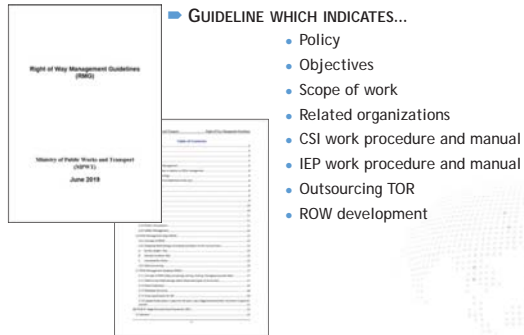
ITEM		MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification		✓				
Raise awareness	1) PCM	✓	✓	✓		
	2) High school / University	✓				✓
	3) Local government office	✓	✓	✓	✓	
Monitoring & intervention	1) Regular patrol	✓	✓	✓		
	2) Collaborating w/ local authorities	✓	✓	✓		
	3) Appealing to court	✓	✓	✓		✓
Permission & Registration	1) ROW permit	✓	✓	✓		
	2) ROW registration	✓	✓	✓	✓	
	3) Access road permit	✓	✓			✓
Supervision	1) Record of "raising awareness"	✓	✓			
	2) Record of "Monitoring"	✓	✓			
	3) Record of "Permission"	✓	✓			

CONCEPT

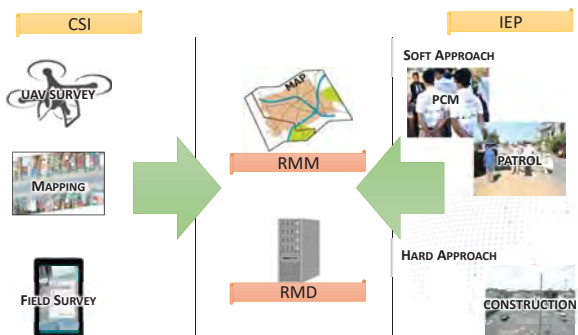
RMS



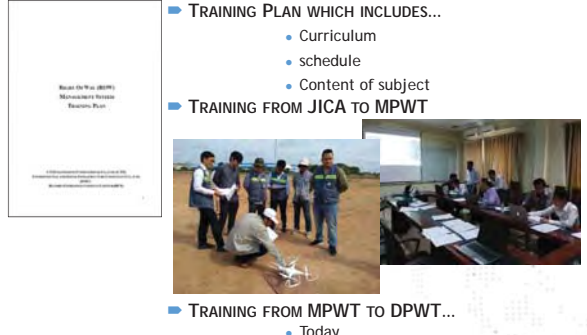
RMG



RMM & RMD



RMS-TP AND TRAINING

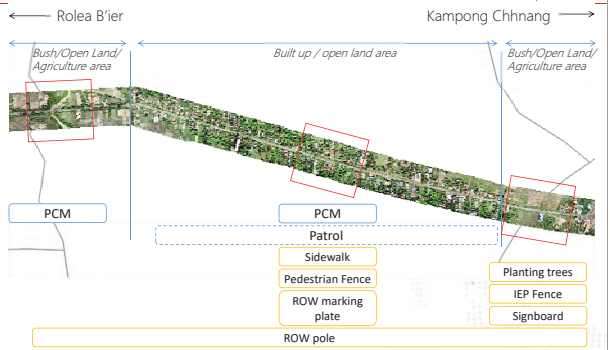


PILOT PROJECT



17

IEP TARGET AREA



CSI TARGET AREA



IEP WORK PROGRESS

		APRIL	MAY	JUNE	JULY	AUG	SEP
SOFT APPROACH	PCM 1	●					
	PCM 2						
HARD APPROACH	K/O MTG	●					
	Construction						



CSI WORK PROGRESS

PROGRESS CHART

- UAV Survey** 100%: 250 flights
- Image Processing** 100%: 36,600,000m²
- Data Production** 100%: 33625 points
- Field Survey** 100%: 25248 ground photos
- Data Finalization** 60%: correcting errors...

ROW MANAGEMENT MAP (RMM):
To Identify Encroachment into ROW on Map

ROW MANAGEMENT DATABASE (RMD):
To show Detailed Information of Encroachment
To count Encroachments for Classification

IEP TARGET AREA



THANK YOU! សូមអរគុណ

23

FIELD SURVEY FOR CSI (CURRENT STATUS IDENTIFICATION)

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

OUTLINE

2

GENERAL

- Current Status Identification (CSI) focuses on data collection related to situation of right of way along national roads and provincial roads across the country in order to creating right of way maps and database as baseline for effective right of way management.
- The purpose of CSI is to study on a current situation of ROW management and developing a ROW current situation map as a baseline so that appropriate measures can be applied for effective ROW management and encroachment prevention.
- The CSI work covers on all national roads under management of MPWT. A primary focus for the CSI is 1-digit national roads of which information is to be compiled on a ROW management map. After the completion of the map for the 1-digit national roads, 2-digit national roads will be targeted.

ORGANIZATION

Main contents of CSI are:

- 1) UAV survey,
- 2) data processing and
- 3) field survey, which is consisted data processing for Map and preparing survey sheet.

RID & DPWT should understand roles and collaborate with each organization to collect basic information through the surveys.

CSI WORK CONTENTS

Kick-off Meeting

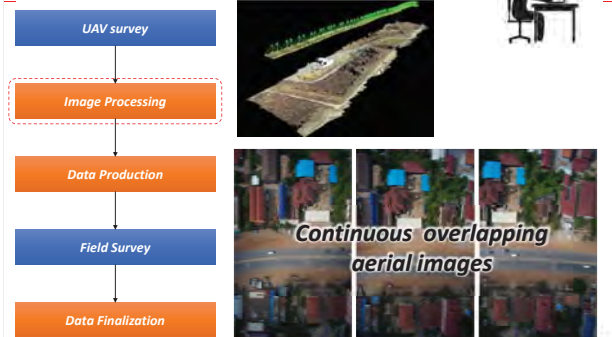
- To explain the work purpose, content and schedule to the local authorities.



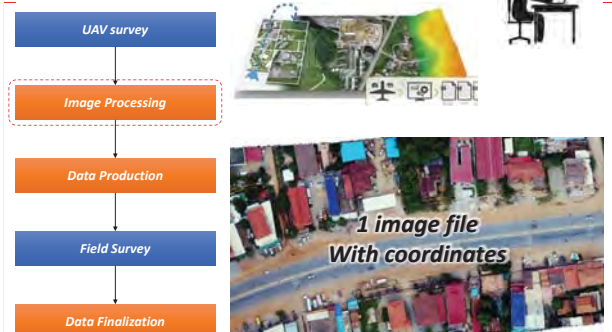
CSI WORK CONTENTS



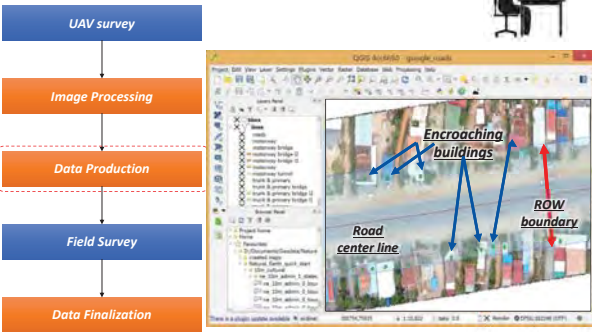
CSI WORK CONTENTS



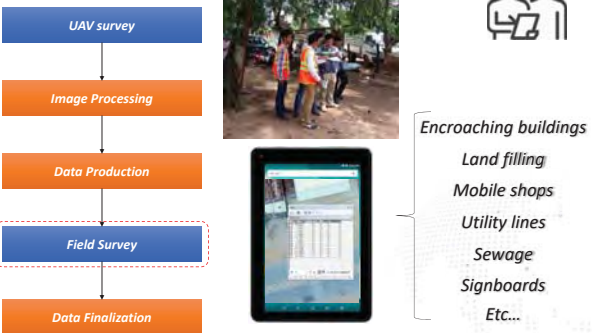
CSI WORK CONTENTS



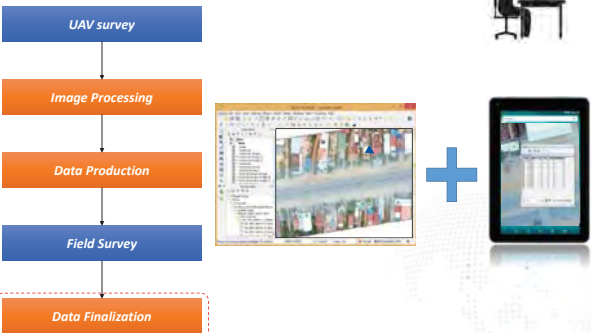
CSI WORK CONTENTS



CSI WORK CONTENTS



CSI WORK CONTENTS



CSI ROLE

	ITEM	MPWT	DPWT	LOCAL AUTHORITY
KICKOFF MTG	Arrangement	✓	✓	
	Implementation	✓	✓	✓
	Flight permission	✓	✓	✓
UAV SURVEY	Flight plan	✓		
	UAV survey	✓	✓	
	Supervision (for outsourcing)	✓		Support
OFFICE WORK	Image processing	✓		
	Mapping (data production)	✓		
FIELD SURVEY	FS permission	✓	✓	✓
	Field survey	✓	✓	
	Supervision	✓		
GIS	data finalization	✓		

PREPARATION FOR FIELD SURVEY

PERMISSIONS - SAMPLE -

Request from
JICA project to MPWT

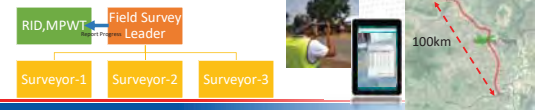
Request for
Drone survey from MPWT

Permission from
Provincial Office

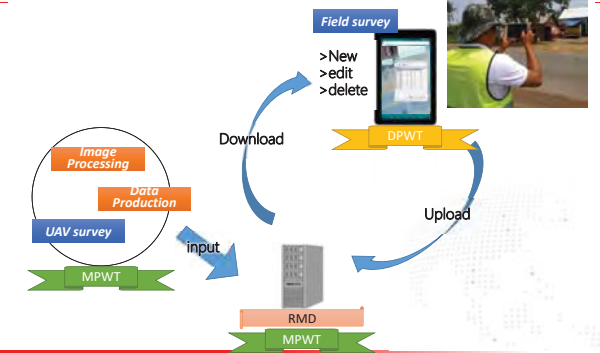
SURVEY TEAM ARRANGEMENT

About team arrangement for Field Survey, the assumption has been considered based on the result of pilot project.

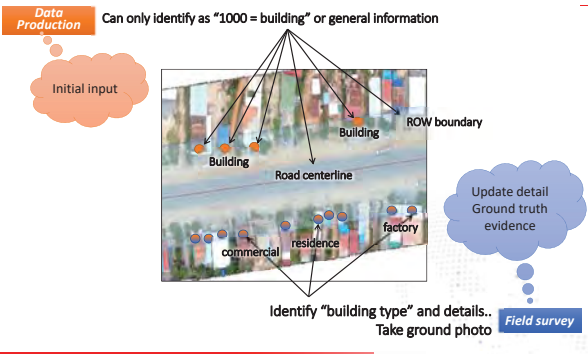
- Field Survey Leader: **1 person** will be assigned to manage Field Survey Team from MPWT or DPWT.
- Field Surveyors: **3 persons** for 1 team will be assigned to implement Field Survey from DPWT. The team could complete 100km within 3 months.
- Team arrangement could be considered depend on scale and priority of road improvement project.



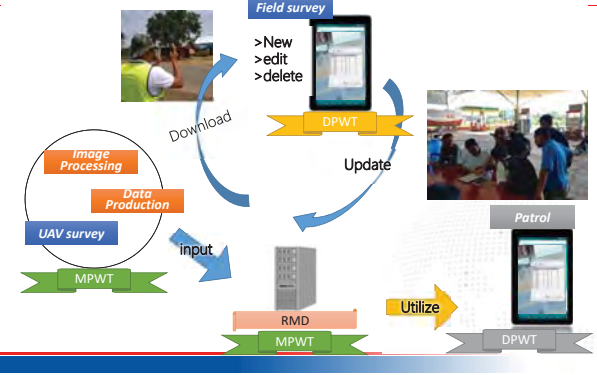
SYSTEM



CONCEPT



UTILIZATION

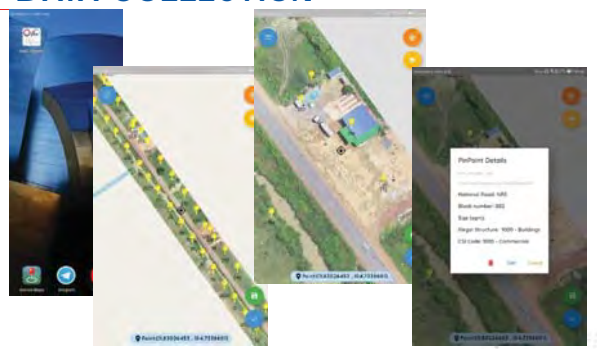


CSI DATA COLLECTION LIST

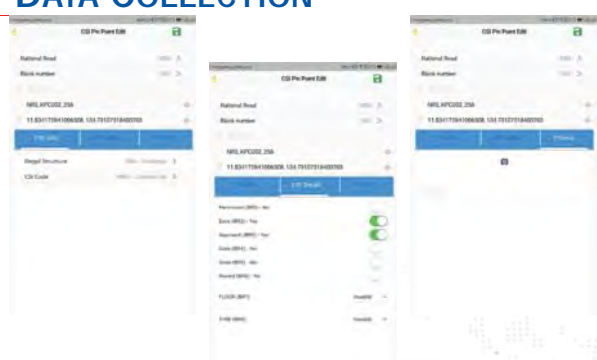
Data Production	Field Survey
1000 Building	1000 Residence
6000 City	1000 Residence/Commercial
6100 1st digit NR	1000 Commercial
6110 1st digit NR Bypass	1000 Shed
6200 2nd digit NR	1000 Temporary shop
6210 2nd digit NR Bypass	1000 Building under construction
6300 3rd digit NR	1000 Factory
6310 3rd digit NR Bypass	1000 Petro station
6999 Other	1000 Public office
8000 NO USE	1010 School public
8001 Flight block	1010 School private
8002 Station block	1010 Pagoda
8003 ROW boundary	1010 Health center
8004 CDI boundary	1010 Mobile cart
8500 Commune boundary	1999 Other
8510 Province boundary	2000 Approach to building
8511 International boundary	2000 Access Road
8999 Other	2000 Land filling
	2000 Open Area
	2000 Parking
	2999 Other
	3100 Signboard public
	3110 Signboard private
	3200 Street Light
	3300 Pylon L
	3310 Pylon R
	3400 Cemetery
	3500 Private drainage
	3600 Well
	3700 KM post
	3800 ROW pole
	3910 C/I pole
	3990 Control point (GCP)
	3910 Benchmark (BM)
	3999 Other
	4000 Post in remarks
	4599 Other
	5000 PCM
	5100 CP hard approach
	5999 Post in remarks
	5999 Other

THANK YOU FOR YOUR ATTENTION!!

DATA COLLECTION



DATA COLLECTION



IEP (ILLEGAL ENCROACHMENT PREVENTION) APPROACHES

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

OUTLINE

2

APPROACH METHODS

5

SOFT & HARD APPROACH

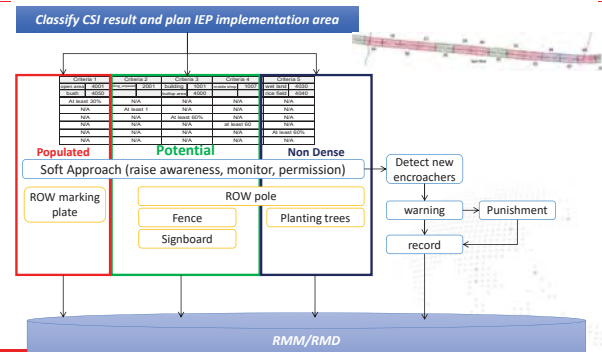
Hard Approach			Soft Approach			
New Road Design	Installing Facilities	Permission and Registration	Monitoring and Intervention	Raising awareness		
Constructing sub-road as ROW boundary	Digging channels as ROW boundary Pole Signboard Fence Growing Tree	ROW marking plate Access road permit	ROW use permit Appealing to the court	Regular patrol activities Collaborating with local authorities	Local governmental official High school and university students	Local people

GENERAL

- ROW management map is developed using the data collection activities from CSI. Based on densities of ROW encroachments pointed on the ROW map, ROW areas shall be classified into populated, potential and non-dense areas. IEP shall be implemented properly according to classification of areas on ROW management map in order not to allow any illegal or inappropriate land uses in ROW.
- IEP approaches aim to prevent new encroachment in the ROW and to regulate temporary use of ROW with permission so as to manage and maintain the land secured for road development.

IEP METHOD CLASSIFICATION

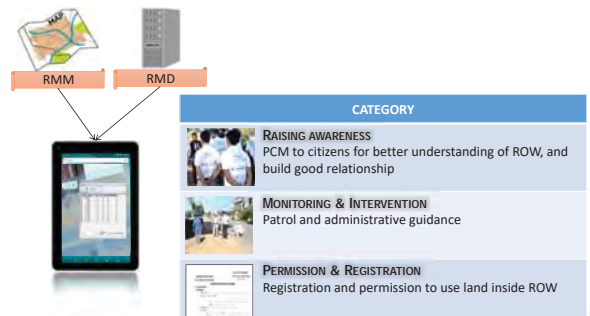
SOFT APPROACH
HARD APPROACH



ORGANIZATION

- According to Law on Road, MPWT is the road control authority in charge of construction, maintenance and management of all national roads in Cambodia. Also, Road Infrastructure Department (RID) of MPWT is a main actor in charge of ROW management of all national roads. Additionally, there are also other agencies/ministries involved in the ROW management such as Ministry of Interior, Ministry of Land Management, Urban Planning and Construction and Ministry of Education, Youth and Sport. MPWT is responsible for coordination, implementation, maintenance of the necessary records on the ROW and expenditure management and preparation of budgetary provisions.

IEP SOFT APPROACH



IEP HARD APPROACH

- 1. ROW POLE
- 2. IEP FENCE
- 3. SIGNBOARD
- 4. ROW MARKING PLATE
- 5. PEDESTRIAN FENCE
- 6. GROWING TREE

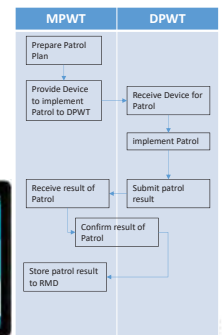


SOFT APPROACH-2

Monitoring and Intervention

MPWT and DPWT should collaborate to implement "Patrol" to collect the evidence from resident and to provide "Warning" for Illegal Encroachment.

- Patrol
- Administrative Guidance (To be Considered)



ROLES & PROCEDURES



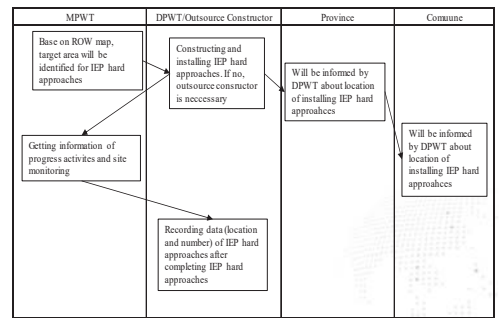
IEP HARD APPROACH ROLE

ITEM	MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification	✓				
Raise awareness (PCM)	1) Citizen	✓	✓		
	2) High school / University	✓			✓
	3) Local government office	✓	✓	✓	
Monitoring & intervention	1) Regular patrol	✓	✓	✓	
	2) Collaborating w/ local authorities		✓	✓	
	3) Appealing to court	✓	✓	✓	✓
Permission & Registration	1) ROW permit	✓	✓	✓	
	2) ROW registration	✓	✓	✓	
	3) Access road permit	✓	✓		✓
Supervision	1) Record of "raising awareness"	✓	✓		
	2) Record of "Monitoring"	✓	✓		
	3) Record of "Permission"	✓	✓		

IEP SOFT APPROACH ROLE

ITEM	MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification	✓				
Raise awareness (PCM)	1) Citizen	✓	✓		
	2) High school / University	✓			✓
	3) Local government office	✓	✓	✓	
Monitoring & intervention	1) Regular patrol	✓	✓	✓	
	2) Collaborating w/ local authorities		✓	✓	
	3) Appealing to court	✓	✓	✓	✓
Permission & Registration	1) ROW permit	✓	✓	✓	
	2) ROW registration	✓	✓	✓	
	3) Access road permit	✓	✓		✓
Supervision	1) Record of "raising awareness"	✓	✓		
	2) Record of "Monitoring"	✓	✓		
	3) Record of "Permission"	✓	✓		

HARD APPROACH

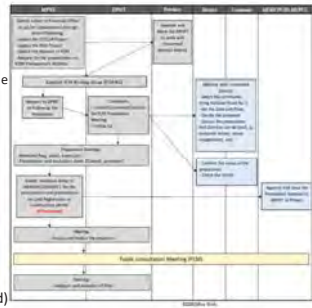


SOFT APPROACH-1

Raising awareness

Relevant organizations such as MPWT, DPWT and Local Authority should collaborate to provide "Consultation Meeting" to local people and relevant governments to ensure better understanding of ROW, and build good relationship

- Raising local people's awareness
- Raising relevant government officials' awareness
- Integrating ROW concept into school curriculum (To be Considered)



ផលវិជ្ជមាន និងផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

ផលវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

- កាត់បន្ថយការចំណាយរបស់ រដ្ឋាភិបាលទៅលើការដោះស្រាយផលប៉ះពាល់នៅពេលអភិវឌ្ឍផ្លូវ
- ងាយស្រួលក្នុងការអភិវឌ្ឍន៍បរិក្ខារផ្លូវផ្សេងៗដូចជា លូ ផ្លាកសញ្ញាពេចណ៍
- កាត់បន្ថយដំណោះដោះដី និងប្រជាពលរដ្ឋ
- កាត់បន្ថយគ្រោះថ្នាក់ចរាចរ (គ្មានអ្នករស់នៅក្បែរផ្លូវ, អ្នកបើកបរមើលឃើញស្ថានភាពផ្លូវច្បាស់)
- ធ្វើឱ្យផ្លូវប្រើប្រាស់បានយូរ មិនងាយខូច (ដោយសារមានគ្មានការបាក់ដីខ្ពស់ជាងផ្លូវមានប្រព័ន្ធរំលោភដីផ្លូវគ្រប់គ្រាន់)
- ផ្លូវមានសោភ័ណភាព

ផលវិជ្ជមាន និងផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

ផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

- រដ្ឋចំណាយច្រើនទៅលើការដោះស្រាយផលប៉ះពាល់ គម្រោងពង្រីកផ្លូវ
- ធ្វើឱ្យផ្លូវឆាប់ខូច (ដោយសារការរស់នៅជាប់ផ្លូវ, ចាក់ដីខ្ពស់ជាងផ្លូវ)
- រួមចំណែក បង្កគ្រោះថ្នាក់ចរាចរ ដោយសារការចូលមករស់នៅក្នុងដីចំណីផ្លូវជាឧបសគ្គធ្វើឱ្យអ្នកបើកបរមើលមិនច្បាស់
- ផ្លូវគ្មានសោភ័ណភាព

THANK YOU FOR YOUR ATTENTION!

អរគុណសម្រាប់ការយកចិត្តទុកដាក់ស្តាប់

ROW MANAGEMENT ACTIVITY AND PLAN

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

Contents

- Priority Activities
- Future Development Plan

Estimation Cost for ROW Management

Total length of all 1digit & 2digit National Road: 8,055km

<Priority Activities>

- CSI on the all 1digit & 2digit NR: USD 917,000
- PCM for 50 places: USD 100,000 for every year
- Patrol on all 1digit & 2digit NR: USD 73,000 for every year
- New ROW Pole on 1digit & 2digit NR (for 2,675km): USD 3,530,000
- Other Hard approaches is implemented in the national/international road project.

	1 st phase (1Y-3Y)	2 nd phase (4Y-6Y)	3 rd phase (7Y-9Y)
CSI	All 1digit & 2digit NR		Map update
PCM	50 places/year	50 places/year	50 places/year
Patrol	All 1digit & 2digit NR	All 1digit & 2digit NR	All 1digit & 2digit NR
ROW Pole	for 150km	for 600km	for 1,925km

First Phase Target for 3years

- CSI: Half of all 1digit & 2digit NR(3,472km): USD 462,000
- PCM for 50 places (2time in each province): USD 300,000
- Patrol on all 1digit & 2digit NR: USD 73,000
- New ROW Pole for 150km is installed: USD 198,000

Approaches	1 st year	2 nd year	3 rd year	3 years total	Remarks	
CSI	Progress	1,142km	1,142km	1,142km	3,427km	Half of 1 & 2 digit NR
	UAV	\$111,600	\$109,000	\$111,400	\$332,000	(Outsource) 38.9MM
	Office	\$35,300	\$4,400	\$4,400	\$44,100	90.3MM
	FS	\$30,200	\$25,900	\$30,200	\$86,300	321.7MM
	Total	\$177,000	\$139,000	\$146,000	\$462,000	
IEP	PCM	\$100,000	\$100,000	\$100,000	\$300,000	50 places / year
	Patrol	\$72,600	\$72,600	\$72,600	\$217,800	All 1 & 2 digit NR
	ROW Pole	\$66,000	\$66,000	\$66,000	\$198,000	For 150 km
Total	\$239,000	\$239,000	\$239,000	\$717,000		
Total	\$416,000	\$378,000	\$385,000	\$1,179,000		

PRIORITY ACTIVITIES

FUTURE DEVELOPMENT PLAN

Advantages of ROW Management

- Illegal occupation of state land makes implementation of resettlement procedure much more complicated and that management doesn't work effectively.
- And, resettlement cost will be higher in the future without adequate ROW management.
- Adequate ROW management can
 - Minimize the resettlement cost,
 - lead to smooth project implementation related to the road construction without delay of land issue.
- CSI and IEP activities contribute to prevent the illegal encroachment to the ROW on national road and to reduce the resettlement in the future.

Development Plan

- | | | |
|---------------|--------------|----------|
| • NR #1 | Total Length | 162.00Km |
| • NR #2 + 22 | Total Length | 120.00Km |
| • NR #4 | Total Length | 230.00Km |
| • NR #31+33+3 | Total Length | 150.00Km |
| • NR #8 | Total Length | 130.00Km |
| • NR #48 | Total Length | 150.00Km |

Thank you!!!



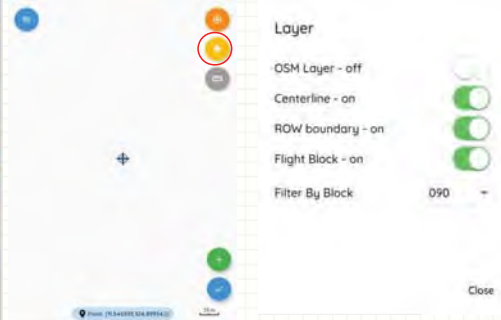
RMD System APP Training



Content:

1. Login
2. Show current location
3. Show Layer
4. Measure distance
5. Show point location
6. Add New CSI Point
7. Edit CSI Point
8. IEP

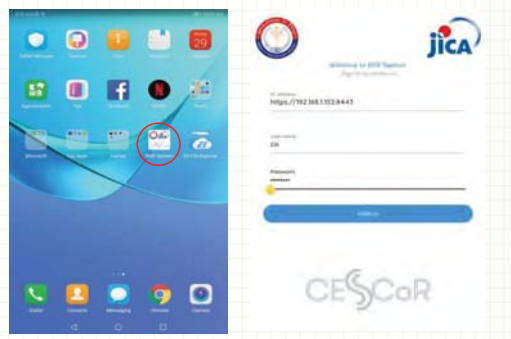
3. Show Layer



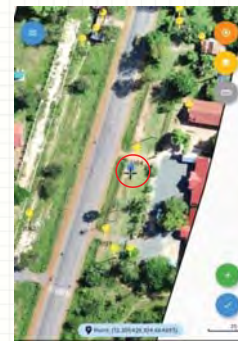
4. Measure distance



1. Login



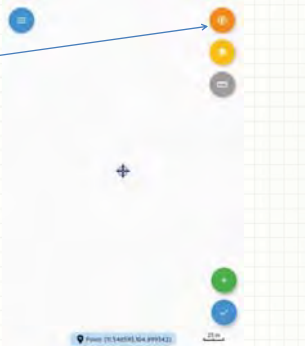
5. Show point location



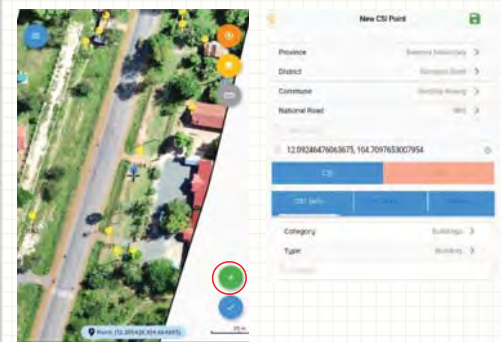
To get any point location by move cursor to that point then click on

2. Show current location

To show current location click on



6. Add New CSI Point



Click on Category then select relevant CSI Category

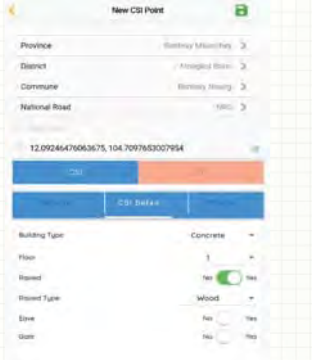


Click on Type the choose

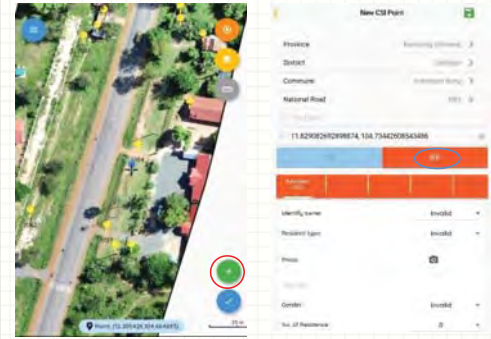
Then update necessary information



Click on CSI Detail Tab



8. IEP

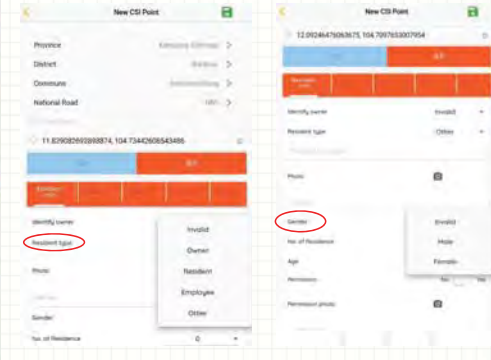


Click on Photos Tab, it can take 3 photos



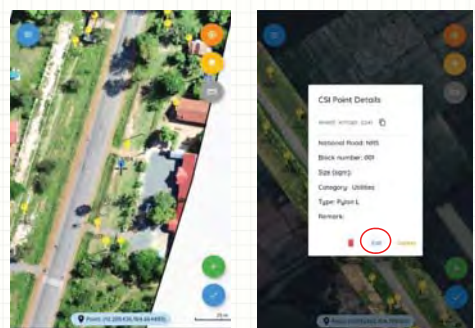
Resident type

Gender



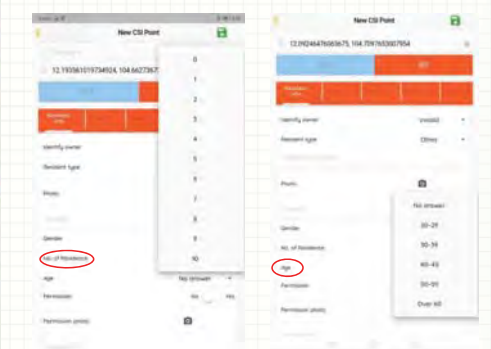
7. Edit CSI Point

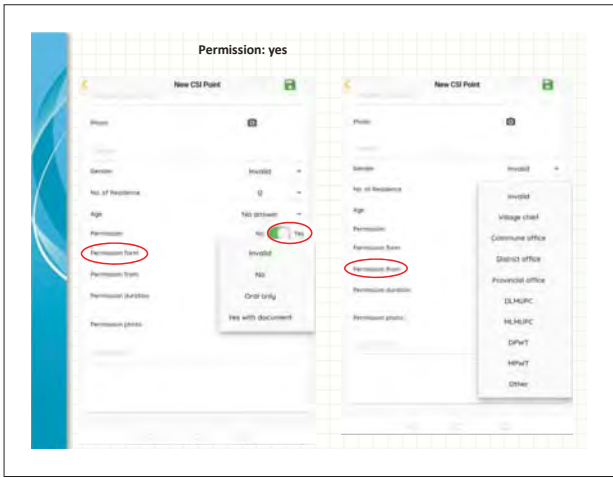
To edit CSI Point, click on CSI point then choose Edit



No. of Residence


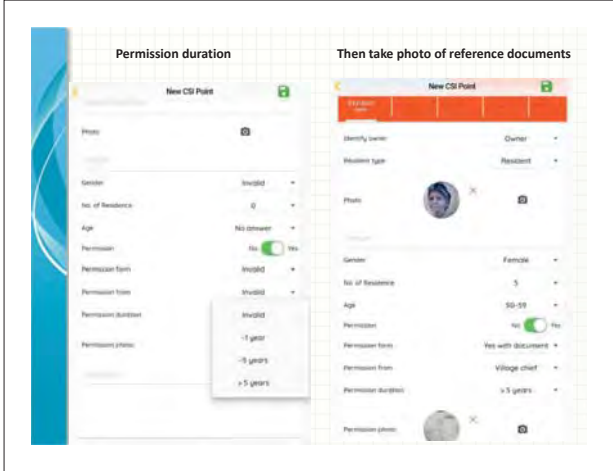
Age



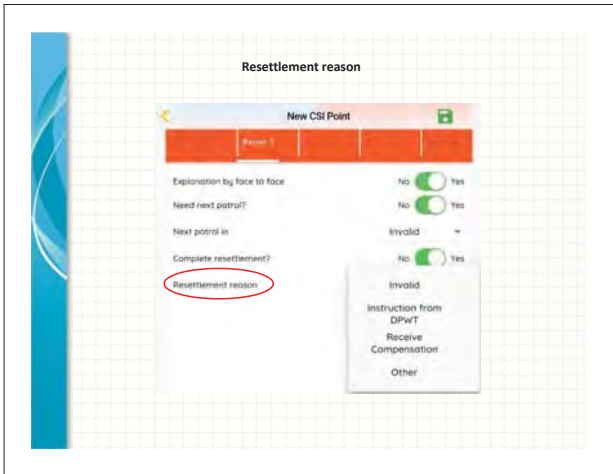
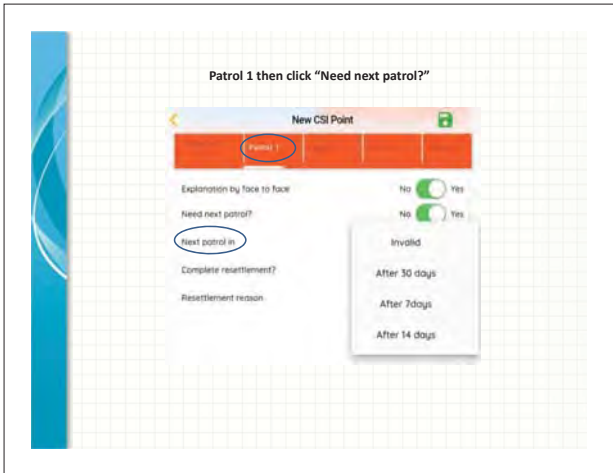


Field Practice at Phnom Penh Hotel

- **Update CSI Point(CSI) :**
Category, Type, Picture
- **Add New CSI Point :**
New Point, Category, Type, Picture
- **Update CSI Point (IEP) :**
Resident Info, Patrol

Thanks!!



NAME (ឈ្មោះ): _____
 ORG (អង្គការ): _____

WORKSHOP សិក្ខាសាលា COMPREHENSION TEST តេស្តសមត្ថភាព

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

គម្រោងពង្រឹងសមត្ថភាពលើការពិចារណាផ្នែកបរិស្ថាន និងសង្គមក្នុង
 អង្គការប្រតិបត្តិលើវិស័យផ្លូវថ្នល់ក្នុងប្រទេសកម្ពុជា

Q1: PURPOSE OF ROW MANAGEMENT
 សំណួរ៖ គោលបំណងនៃការគ្រប់គ្រងដីចំណីផ្លូវ

▶ Select 1 **wrong** answer

សូមជ្រើសរើស ចម្លើយ ១ ដែលខុស

- To sustain public land
 ដើម្បីធ្វើឱ្យទិរន្តរភាពផ្លូវសាធារណៈ
- To prevent illegal encroachment
 ដើម្បីការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់
- To optimize construction
 ដើម្បីធ្វើឱ្យប្រសើរឡើងនូវការសាងសង់
- To enhance road facility management
 ដើម្បីធ្វើឱ្យប្រសើរឡើងនូវការគ្រប់គ្រងបរិក្ខារផ្លូវថ្នល់
- To punish illegal users
 ដើម្បីពិន័យ និងដាក់ទោសអ្នកដែលប្រើប្រាស់ដីចំណីផ្លូវខុសច្បាប់

Q2: FULL TITLE OF RMS COMPONENT
 សំណួរ៖ ចំណងជើងពេញនៃសមាធាតុ RMS

▶ Write the full name of each abbreviation

សូមសរសេរពាក្យពេញនៃពាក្យកាត់ខាងក្រោម (ជាអង់គ្លេស ឬខ្មែរ)

- RMS:
- RMG:
- CSI:
- IEP:
- RMM:
- RMD:

Q3: PURPOSE OF CSI
 សំណួរ៖ គោលបំណងនៃការកំណត់ស្ថានភាពបច្ចុប្បន្ន

▶ Select 1 **wrong** answer

សូមជ្រើសរើស ចម្លើយ ១ ដែលខុស

- To identify current situation
 ដើម្បីកំណត់ស្ថានភាពបច្ចុប្បន្ន
- To create Right Of Way Management Map
 ដើម្បីបង្កើតផែនទីគ្រប់គ្រងដីចំណីផ្លូវ
- To create baseline for IEP classification
 ដើម្បីកំណត់គោលការណ៍មូលដ្ឋាន (Baseline) សម្រាប់ការធ្វើចំណាត់ថ្នាក់
 វិធីសាស្ត្រការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់
- To construct sustainable infrastructure
 ដើម្បីសាងសង់ហេដ្ឋារចនាសម្ព័ន្ធដែលមានទិរន្តរភាព

Q4: ROLE FOR EACH ACTIVITY IN CSI
 សំណួរ៖ តួនាទីសម្រាប់សកម្មភាពនីមួយៗក្នុងការងារCSI

▶ Fill [✓] for correct authority for DPWT role សូមគុណ [✓] សម្រាប់សមត្ថកិច្ចត្រឹមត្រូវសម្រាប់មន្ទីរ

ITEM ប្រភេទ	MPWT ក្រសួង	DPWT មន្ទីរ	LOCAL AUTHORITY អាជ្ញាធរមូលដ្ឋាន
KICKOFF MTG (កិច្ចប្រជុំចាប់ផ្តើម)	Arrangement ការរៀបចំ	✓ []	[]
	Implementation ការអនុវត្ត	✓ []	✓ []
UAV SURVEY (ការស្រាវជ្រាវ UAV)	Flight permission ការអនុញ្ញាតឱ្យបោះពុម្ពផ្សាយ	✓ []	✓ []
	Flight plan ផែនការបោះពុម្ពផ្សាយ	✓ []	[]
	UAV survey ការស្រាវជ្រាវដោយប្រើប្រាស់ UAV	✓ []	[]
OFFICE WORK (ការងារនៅទីស្នាក់ការកណ្តាល)	Supervision (for outsourcing) ការត្រួតពិនិត្យ (ឧបត្ថម្ភការងារ)	✓ []	[]
	Image processing ដំណើរការរៀបចំរូបភាព Mapping (data production) ការធ្វើផែនទី (ផលិតទិន្នន័យ)	✓ []	[]
FIELD SURVEY (ការចាតុប្រតិបត្តិការ)	FS permission ការអនុញ្ញាតឱ្យចាតុប្រតិបត្តិការ	✓ []	✓ []
	Field survey ការចាតុប្រតិបត្តិការ	[]	[]
	Supervision ការត្រួតពិនិត្យ	✓ []	[]
GIS	data finalization ការបញ្ចប់ទិន្នន័យ	✓ []	[]

Q5: PURPOSE OF IEP
 សំណួរ៖ គោលបំណងនៃវិធីសាស្ត្រការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់

▶ Select 1 **wrong** answer

សូមជ្រើសរើស ចម្លើយ ១ ដែលខុស

- To select most suitable area for bridge construction
 ដើម្បីជ្រើសរើសតំបន់ដែលសមស្របបំផុតសម្រាប់សាងសង់ស្ពាន
- To classify population inside Right Of Way
 ដើម្បីធ្វើចំណាត់ថ្នាក់ចំនួនប្រជាជនដែលរស់នៅក្នុងដីចំណីផ្លូវ
- To prevent new encroachment
 ដើម្បីការពារការទម្រានដីចំណីផ្លូវថ្មី
- To manage and maintain public land
 ដើម្បីគ្រប់គ្រង និងថែទាំដីសាធារណៈ

Q6: ROLE FOR EACH ACTIVITY IN IEP
 សំណួរ៖ តួនាទីសម្រាប់សកម្មភាពនីមួយៗក្នុងការងារការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់ (អង់គ្លេស)

▶ Fill [✓] for correct authority for DPWT role

ITEM	MPWT	DPWT	Local Authority	MUMUPC	OTHER
Classification	✓ []	[]			
Raise awareness	1) PCM	✓ []	✓ []		
	2) High school / University	✓ []	[]		✓ []
	3) Local government office	✓ []	[]	✓ []	
Monitoring & intervention	1) Regular patrol	✓ []	✓ []		
	2) Collaborating w/ local authorities	[]	[]	✓ []	
	3) Appealing to court	✓ []	✓ []		✓ []
Permission & Registration	1) ROW permit	✓ []	✓ []		
	2) ROW registration	✓ []	[]	✓ []	
	3) Access road permit	✓ []	[]		✓ []
Supervision	1) Record of "raising awareness"	✓ []	[]		
	2) Record of "Monitoring"	✓ []	[]		
	3) Record of "Permission"	✓ []	[]		

Q6: ROLE FOR EACH ACTIVITY IN IEP
 សំណួរ៖ តួនាទីសម្រាប់សកម្មភាពនីមួយៗក្នុងការងារការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់ (ភាសាខ្មែរ)

▶ សូមគុណ [✓] សម្រាប់សមត្ថកិច្ចត្រឹមត្រូវសម្រាប់មន្ទីរ

ប្រភេទ	ក្រសួង	មន្ទីរ	អាជ្ញាធរ	ក្រសួងព័ត៌មាន	ផ្សេងៗ
ចំណាត់ថ្នាក់	✓ []	[]			
ការលើកកម្ពស់ការយល់ដឹង	1) កិច្ចប្រជុំ/ប្រារព្ធនានា	✓ []	✓ []		✓ []
	2) វិទ្យាល័យ/បណ្ឌិត្យាល័យ	✓ []	[]		
	3) ការងារយល់ដឹងក្នុងសហគមន៍	✓ []	[]	✓ []	✓ []
ការត្រួតពិនិត្យ និងការអនុវត្ត	1) ការស្រាវជ្រាវ	✓ []	✓ []		
	2) សហការជាមួយអាជ្ញាធរមូលដ្ឋាន	[]	[]	✓ []	
	3) បណ្តុះបណ្តាល	✓ []	[]		✓ []
ការអនុញ្ញាត និងការចុះបញ្ជី	1) ការអនុញ្ញាតប្រើប្រាស់ដីចំណីផ្លូវ	✓ []	✓ []		
	2) ការចុះបញ្ជីដីចំណីផ្លូវ	✓ []	[]	✓ []	
	3) ការអនុញ្ញាតសាងសង់ផ្លូវថ្នល់បណ្តោយ	✓ []	[]		✓ []
ការត្រួតពិនិត្យ	1) ការត្រួតពិនិត្យដីចំណីផ្លូវសាធារណៈ	✓ []	[]		
	2) ការត្រួតពិនិត្យដីចំណីផ្លូវ	✓ []	[]		
	3) ការត្រួតពិនិត្យការអនុញ្ញាត	✓ []	[]		

Q7: WHAT IS THE TABLET & APP FOR?
សំណួរលេខ ៧ តើ TABLET និង APP សម្រាប់ធ្វើការងារអ្វី?

1P

► Select 1 **wrong** answer

សូមជ្រើសរើស ចម្លើយ ១ ដែលខុស

- 1. For CSI UAV survey
សម្រាប់ការងារស្រាវជ្រាវបង្ហាញរូបភាពដីឡើងវិញកំណត់ស្ថានភាពបច្ចុប្បន្ន
- 2. For CSI field survey
សម្រាប់ការងារចុះស្រាវជ្រាវដីឡើងវិញកំណត់ស្ថានភាពបច្ចុប្បន្ន
- 3. For IEP patrol
សម្រាប់ការងារល្បាតដីឡើងវិញការពារការទម្រង់ដីចំណីផ្លូវខុសច្បាប់
- 4. For IEP activity record
សម្រាប់កត់ត្រាសកម្មភាពការពារការទម្រង់ដីចំណីផ្លូវខុសច្បាប់



END OF THE TEST!!

ចុងបញ្ចប់នៃបញ្ជីសំណួរ

សូមអរគុណ!!!





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



Date: 29th August 2019

Time: 8:30am-16:00pm

Location: at Phnom Penh Hotel

Topic: The Workshop for Practice of ROW Management System

Attendance List

No	Name	Position	Department/Ministry	Phone
MPWT-RID				
1	H.E. Nou Vaddhanak	Under Secretary of State	MPWT	
2	Mr. Khuon Kompheak	Deputy Director	RID/MPWT	
3	Mr. Chea Samnang	Chief of ROW Office	RID/MPWT	
4	Mr. Hay Chandara	Deputy Chief of ROW Office	RID/MPWT	
5	Mr. Khai Saray	Deputy Chief of ROW Office	RID/MPWT	
6	Mr. Sokun Piseth	Deputy Chief of Office	RID/MPWT	
7	Mr. Kaing Theara	Officer	RID/MPWT	
8	Mr. Nob Keilarith	Deputy Chief of Office	RID/MPWT	
9	Mr. Sao Premarak	Deputy Chief of Office	RID/MPWT	
10	Ms. Chhai Chariya	Deputy Chief of Office	RID/MPWT	
11	Ms. Thou Saovary	Deputy Chief of Office	RID/MPWT	
MPWT-PID				
12	Mr. Kong Youreth	Chief Officer	PID/MPWT	
13	Mr. Phat Vanthy	Chief Officer	PID/MPWT	
14	Ms. Eam Sokchea	Deputy Chief of Office	PID/MPWT	
MPWT-ICD				
15	Mr. Sok Ly	Deputy Director	ICD/MPWT	
16	Mr. Peang Samoeun	Chief Officer	ICD/MPWT	
17	Ms. Oum Sokvasey	Chief Officer	ICD/MPWT	
18	Mr. An Menghour	Officer	ICD/MPWT	
DPWT-Kampong Cham Province				
19	Mr. Sao Pharith	Chief of Public Works Office	MPWT	
20	Mr. Sen Sopheak	Deputy Chief of	MPWT	



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



		Technical Office		
21	Mr. Chea Sovan	Deputy Chief of Technical Office	MPWT	
DPWT-Kampong Thom Province				
22	Mr. Houy Pouthearith	Deputy Chief of Technical Office	DPWT	
23	Mr. Kouern Molika	Officer	DPWT	
24	Mr. Heng Karona	Officer	DPWT	
DPWT-Siem Reap Province				
25	Mr. Tan Kimang	Chief of Order Office	DPWT	
26	Mr. Nhel Poutnin	Officer of Order Office	DPWT	
DPWT-Oddar Meanchey Province				
27	Mr. Hoeun Sengtin	Officer	DPWT	
28	Mr. Jen Ranakroth	Officer	DPWT	
29	Mr. Louem Raksmeay	Chief Officer	DPWT	
30	Mr. Kouy Vibol	Officer	DPWT	
Others				
31	Ms. Lim Sopokhem	Assistant Professor	Waseda University	
JICA Project Team_CESCoR				
32	Mr. Akira Yamashita	Team Leader	JICA Project Team	
33	Mr. Kumagai Takahiro	Project Coordinator	JICA Project Team	
34	Ms. Sakiko Nomura	Intern	JICA Project Team	
35	Ms. Ches Sophy	Project Assistant	JICA Project Team	
36	Mr. Penh Soheat	Technical Assistant	JICA Project Team	
37	Mr. Bun Sereyvuth	Project Assistant	JICA Project Team	
38	Mr. Mut Samon	Assistant	JICA Project Team	
39	Mr. Preah Loch	Assistant	JICA Project Team	

Workshop for Practice of ROW Management System
Date: 29th August 2019 at PHNOM PENH Hotel

Correction of Comprehensive Test (with TF Members)

No.	Participants	Organization	Q1 (1p): Purpose of ROW Management	Q2 (6p): Full name of each abbreviation	Q3 (1p): Purpose of CSI	Q4 (6p): Correct authority for DPWT	Q5 (1p): Purpose of IEP	Q6 (4p): Correct authority for DPWT Role	Q7 (1p): What is the Tablet and App for?	Total (score) 20/20
1	Mr. Sok Ly	MPWT-ICD	1	6	1	6	1	4	1	20
2	Mr. Peang Sameoun	MPWT-ICD	1	5	0	6	1	3.5	0	16.5
3	Mr. An Menghour	MPWT-ICD	1	6	1	6	1	4	0	19
4	Mr. Khai Saray	MPWT-RID	1	6	1	6	1	4	1	20
5	Mr. Chea Samnang	MPWT-RID	1	6	1	6	1	4	1	20
6	Mr. Khoun Kompheak	MPWT-RID	1	6	1	6	1	4	1	20
7	Mr. Hay Chandara	MPWT-RID	1	6	1	6	1	4	1	20
8	Mr. Nop Keilarith	MPWT-RID	1	6	1	6	1	4	1	20
9	Mr. Sao Premarak	MPWT-RID	1	6	1	6	1	4	1	20
10	Ms. Thou Saovry	MPWT-RID	1	6	0	6	1	4	1	19
11	Ms. Chen Ranak Rath	MPWT-RID	1	6	0	6	1	4	1	19
12	Ms. Chhay Chakriya	MPWT-RID	1	6	0	6	1	4	1	19
13	Mr. Kong Youreth	MPWT-PID	0	6	1	6	0	4	1	18
14	Ms. Eam Sokchea	MPWT-PID	1	6	1	5	1	4	1	19
15	Mr. Phat Vanthy	MPWT-PID	0	6	1	5	1	4	1	18
16	Mr. Nhil Puthavein	DPWT-Siem Reap	0	6	1	5	1	3.5	0	16.5
17	Mr. Tann Kimorn	DPWT-Siem Reap	0	6	1	5	1	3	1	17
18	Mr. Pha Sovann	DPWT-Kampong Cham	0	6	1	6	1	4	1	19
19	Mr. Sao Pharith	DPWT-Kampong Cham	0	3	0	5	1	3.5	1	13.5

20	Mr. Sen Sopheak	DPWT-Kampong Cham	1	6	1	6	1	4	0	19
21	Ms. Koeun Molika	DPWT-Kampong Thom	1	4	1	6	1	4	1	18
22	Mr. Huy Puthearith	DPWT-Kampong Thom	1	6	1	6	1	4	1	20
23	Mr. Heng Kakrona	DPWT-Kampong Thom	1	6	1	6	1	4	1	20
24	Mr. Kov Vibol	DPWT-Oddor Meanchey	0	6	0	6	1	4	1	18
25	Mr. Heurn Sengtin	DPWT-Oddor Meanchey	0	6	1	5	0	4	0	16
26	Mr. Loeum Reaksmey	DPWT-Oddor Meanchey	0	6	1	6	1	4	1	19

(Q1)	(Q2)	(Q3)	(Q4)	(Q5)	(Q6)	(Q7)
Ratio of correct answer (%)	Ratio of correct answer (%)	Ratio of correct answer (%)	Ratio of correct answer (%)	Ratio of correct answer (%)	Ratio of correct answer (%)	Ratio of correct answer (%)
62.96	85.19	74.07	74.07	88.89	81.48	77.78

Conclusion:

Almost of the participants got the good scores for the test. Based on the Ratio of Correct Answer, Q1 is difficult for the participants.

Workshop for Practice of ROW Management System
Date: 29th August 2019 at PHNOM PENH Hotel

Correction of Comprehensive Test (Without TF Members)

No.	Participants	Organization	Q1 (1p): Purpose of ROW Management	Q2 (6p): Full name of each abbreviation	Q3 (1p): Purpose of CSI	Q4 (6p): Correct authority for DPWT	Q5 (1p): Purpose of IEP	Q6 (4p): Correct authority for DPWT Role	Q7 (1p): What is the Tablet and App for?	Total (score) 20/20
1	Mr. Sok Ly	MPWT-ICD	1	6	1	6	1	4	1	20
2	Mr. Nop Keilarith	MPWT-RID	1	6	1	6	1	4	1	20
3	Ms. Thou Saovry	MPWT-RID	1	6	0	6	1	4	1	19
4	Ms. Chen Ranak Rath	MPWT-RID	1	6	0	6	1	4	1	19
5	Ms. Chhay Chakriya	MPWT-RID	1	6	0	6	1	4	1	19
6	Mr. Phat Vanthy	MPWT-PID	0	6	1	5	1	4	1	18
7	Mr. Nhil Putheavin	DPWT-Siem Reap	0	6	1	5	1	3.5	0	16.5
8	Mr. Tann Kimorn	DPWT-Siem Reap	0	6	1	5	1	3	1	17
9	Mr. Pha Sovann	DPWT-Kampong Cham	0	6	1	6	1	4	1	19
10	Mr. Sao Pharith	DPWT-Kampong Cham	0	3	0	5	1	3.5	1	13.5

11	Mr. Sen Sopheak	DPWT-Kampong Cham	1	6	1	6	1	4	0	19
12	Ms. Koeun Molika	DPWT-Kampong Thom	1	4	1	6	1	4	1	18
13	Mr. Huy Puthearith	DPWT-Kampong Thom	1	6	1	6	1	4	1	20
14	Mr. Heng Kakrona	DPWT-Kampong Thom	1	6	1	6	1	4	1	20
15	Mr. Kov Vibol	DPWT-Oddor Meanchey	0	6	0	6	1	4	1	18
16	Mr. Heurn Sengtin	DPWT-Oddor Meanchey	0	6	1	5	0	4	0	16
17	Mr. Loeum Reaksmeay	DPWT-Oddor Meanchey	0	6	1	6	1	4	1	19

(Q1) Ratio of correct answer (%) (Q2) Ratio of correct answer (%) (Q3) Ratio of correct answer (%) (Q4) Ratio of correct answer (%) (Q5) Ratio of correct answer (%) (Q6) Ratio of correct answer (%) (Q7) Ratio of correct answer (%)

33.33

55.56

44.44

44.44

59.26

51.85

51.85

Conclusion:

Without TF Members' scores added, the ratio of correct answer of each question is low ranging from 33.33% to 59.26%. The Q1 seems very difficult to all participants. The reason is that it was the first time for all DPWTs' officials from these provinces (Kampong Cham, Kampong Thom, Siem Reap and Oddor Meanchey) to learn about the CESCO project as well as the CSI and IEP.

Sample of Form **Workshop Evaluation (Workshop for Practice of ROW Management System)** Strongly Agree 1 2 3 4 5 Strongly Disagree

1. Presentation on Outline for ROW Management Methods

- 1.1 Topics were interesting.
- 1.2 Materials distributed were useful.
- 1.3 The presentations were clear and easy to understand.
- 1.4 If you have any specific comments, please kindly share with us as below:

Comments

2. Presentation on Field Survey for Current Status Identification (CSI)

- 2.1 Topics were interesting.
- 2.2 Materials distributed were useful.
- 2.3 The presentations were clear and easy to understand.
- 2.4 If you have any specific comments, please kindly share with us as below:

Comments

3. Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches

- 3.1 Topics were interesting.
- 3.2 Materials distributed were useful.
- 3.3 The presentations were clear and easy to understand.
- 3.4 If you have any specific comments, please kindly share with us as below:

Comments

4. Presentation on ROW Management Activity and Plan

- 4.1 Topics were interesting.
- 4.2 Materials distributed were useful.
- 4.3 The presentations were clear and easy to understand.
- 4.4 If you have any specific comments, please kindly share with us as below:

Comments

5. Presentation on Implementation of Field Survey (CSI) and Patrol (IEP)

- 5.1 Topics were interesting.
- 5.2 Materials distributed were useful.
- 5.3 The presentations were clear and easy to understand.
- 5.4 If you have any specific comments, please kindly share with us as below:
Comments

6. Workshop Organization
- 6.1 The workshop met my expectations.
 - 6.2 Workshop was nicely organized.
 - 6.3 Interpretation for workshop was clear to understand.
 - 6.4 The time for each presentation was
 - 6.5 The time for discussion was

7. Overall, how do you rate the Workshop?

8. What aspects of workshop can be improved for the next one?
Comments

9. If you any specific comments, please kindly share with us as below:
Comments

Summary of Workshop Evaluation (Workshop for Practice of ROW Management System)

	Strongly Agree					Strongly Disagree					Total	
	1	2	3	4	5	1	2	3	4	5		
1. Presentation on Outline for ROW Management Methods												
1.1 Topics were interesting.	14	9	1	1	0	0	0	0	0	0	25	
1.2 Materials distributed were useful.	10	11	4	0	0	0	0	0	0	0	25	
1.3 The presentations were clear and easy to understand.	8	12	4	1	0	0	0	0	0	0	25	
1.4 If you have any specific comments, please kindly share with us as below:											3	
Percentage												
1.1 Topics were interesting.	56%	36%	4%	4%	0%	0%	0%	0%	0%	0%		
1.2 Materials distributed were useful.	40%	44%	16%	0%	0%	0%	0%	0%	0%	0%		
1.3 The presentations were clear and easy to understand.	32%	48%	16%	4%	0%	0%	0%	0%	0%	0%		
1.4 If you have any specific comments, please kindly share with us as below:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		

	Strongly Agree					Strongly Disagree					Total	
	1	2	3	4	5	1	2	3	4	5		
2. Presentation on Field Survey for Current Status Identification (CSI)												
2.1 Topics were interesting.	14	7	3	0	1	0	0	0	0	1	25	
2.2 Materials distributed were useful.	8	13	3	0	1	0	0	0	0	1	25	
2.3 The presentations were clear and easy to understand.	10	9	3	2	1	0	0	0	0	0	25	
2.4 If you have any specific comments, please kindly share with us as below:											3	
Percentage												
2.1 Topics were interesting.	56%	28%	12%	0%	4%	0%	0%	0%	0%	4%		
2.2 Materials distributed were useful.	32%	52%	12%	0%	4%	0%	0%	0%	0%	4%		
2.3 The presentations were clear and easy to understand.	40%	36%	12%	8%	4%	0%	0%	0%	0%	0%		
2.4 If you have any specific comments, please kindly share with us as below:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%		

Strongly Agree Strongly Disagree

1 2 3 4 5

	1	2	3	4	5	Total
3. Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches						
3.1 Topics were interesting.	13	8	1	1	2	25
3.2 Materials distributed were useful.	7	10	7	0	1	25
3.3 The presentations were clear and easy to understand.	3	10	8	4	0	25
3.4 If you have any specific comments, please kindly share with us as below:						4
Percentage						
3.1 Topics were interesting.	52%	32%	4%	4%	8%	
3.2 Materials distributed were useful.	28%	40%	28%	0%	4%	
3.3 The presentations were clear and easy to understand.	12%	40%	32%	16%	0%	
3.4 If you have any specific comments, please kindly share with us as below:	0%	0%	0%	0%	0%	

Strongly Agree Strongly Disagree

1 2 3 4 5

	1	2	3	4	5	Total
4. Presentation on ROW Management Activity and Plan						
4.1 Topics were interesting.	11	8	2	3	0	24
4.2 Materials distributed were useful.	6	14	2	2	0	24
4.3 The presentations were clear and easy to understand.	8	9	4	3	0	24
4.4 If you have any specific comments, please kindly share with us as below:						2
Percentage						
4.1 Topics were interesting.	46%	33%	8%	13%	0%	
4.2 Materials distributed were useful.	25%	58%	8%	8%	0%	
4.3 The presentations were clear and easy to understand.	33%	38%	17%	13%	0%	
4.4 If you have any specific comments, please kindly share with us as below:	0%	0%	0%	0%	0%	

Strongly Agree Strongly Disagree

1 2 3 4 5

	1	2	3	4	5	Total
5. Presentation on Implementation of Field Survey (CSI) and Patrol (IEP)						
5.1 Topics were interesting.	13	7	1	1	1	23
5.2 Materials distributed were useful.	6	10	6	0	1	23
5.3 The presentations were clear and easy to understand.	5	9	8	1	0	23
5.4 If you have any specific comments, please kindly share with us as below:						0
Percentage						
5.1 Topics were interesting.	57%	30%	4%	4%	4%	
5.2 Materials distributed were useful.	26%	43%	26%	0%	4%	
5.3 The presentations were clear and easy to understand.	22%	39%	35%	4%	0%	
5.4 If you have any specific comments, please kindly share with us as below:	error	error	error	error	error	

	1	2	3	4	5	Total
6. Workshop Organization						
6.1 The workshop met my expectations.	9	13	2	1	0	25
6.2 Workshop was nicely organized.	11	9	4	1	0	25
6.3 Interpretation for seminar was clear to understand.	7	10	5	2	0	24
6.4 The time for reach presentation was	1	24	0			25
6.5 The time for discussion was	6	19	0			25
Percentage						
6.1 The workshop met my expectations.	36%	52%	8%	4%	0%	
6.2 Workshop was nicely organized.	44%	36%	16%	4%	0%	
6.3 Interpretation for seminar was clear to understand.	29%	42%	21%	8%	0%	
6.4 The time for reach presentation was	4%	96%	0%			
6.5 The time for discussion was	24%	76%	0%			

	Excellent		Very Poor			Total
	1	2	3	4	5	
7. Overall, how do you rate the workshop?	5	19	1			25
Percentage	20%	76%	4%	0%	0%	
7. Overall, how do you rate the workshop?						

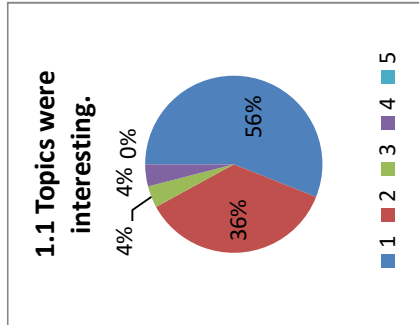
8. What aspects of workshop can be improved for the next one? 6

9. If you have any specific comments: 5

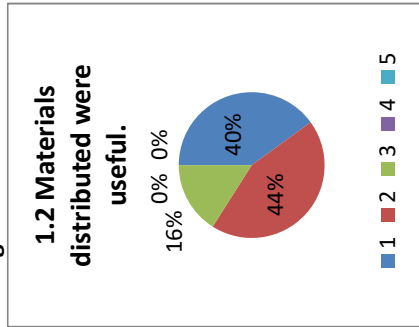
Summary of Evaluation: Workshop for Practice of ROW Management System

Date: 29th August 2018
Time: 8:00-16:00
Venue: PHNOM PENH Hotel Meeting Room
Participants: 18
DPWT: 12
Others: 1
Project Team: 8

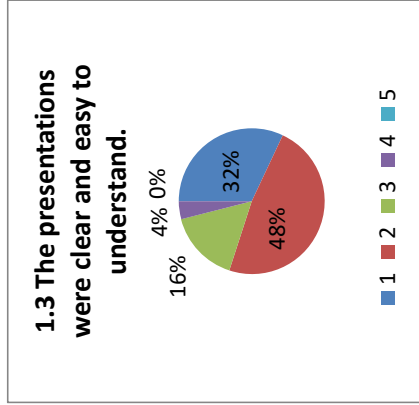
1. Presentation on Outline for ROW Management Methods



Strongly Agree Strongly Disagree



Strongly Agree Strongly Disagree

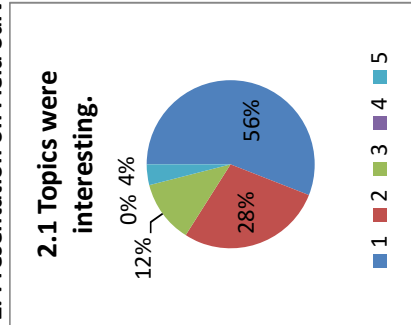


Strongly Agree Strongly Disagree

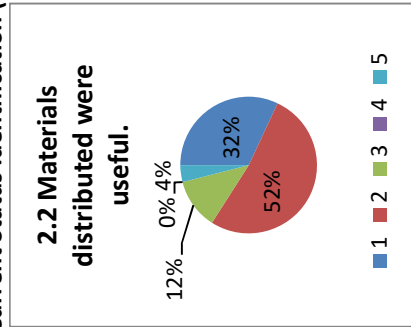
Comments

- ROW management works have been implemented based on the techniques but there is lack of law enforcement. Need to apply the law on the local authority who are careless on the illegal ROW encroachment;
- The presentation is not smooth which makes the participants are hard to catch up the presentation; and
- Presentation material should be in Khmer.

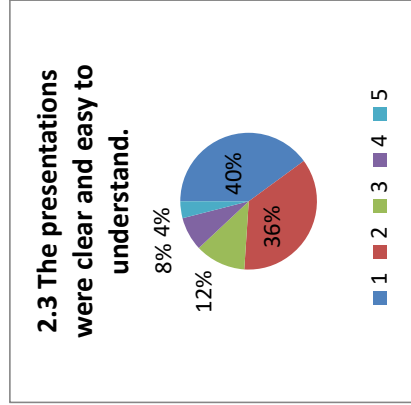
2. Presentation on Field Survey for Current Status Identification (CSI)



Strongly Agree Strongly Disagree



Strongly Agree Strongly Disagree

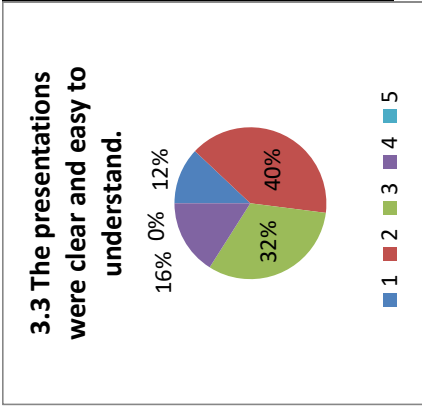
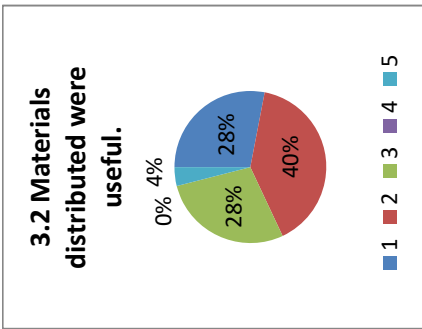
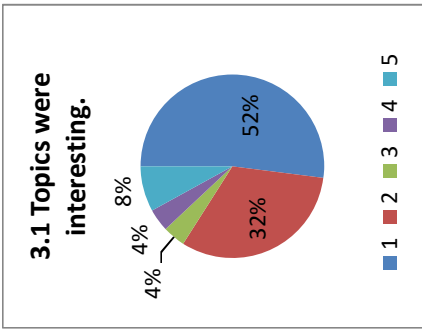


Strongly Agree Strongly Disagree

Comments

- To study the CSI, need the collaboration from local authorities in order to avoid the repeated problems that have no solution;
- Want to have the training on Drone Flight to all officials at all DPWTs; and
- Presentation Material should be in Khmer.

3. Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches



Comments

- Need to set the clear boundary of ROW based on the law, explain the people living along the National Road the difficulties on living inside the ROW. Relevant provincial departments need to inspect their areas regularly;
- not smooth presentation, difficult to understand;
- The presentation is not smooth enough and there is less explanation on some points; and
- Presentation Material should be in Khmer.

Strongly Agree

Strongly Disagree

Strongly Agree

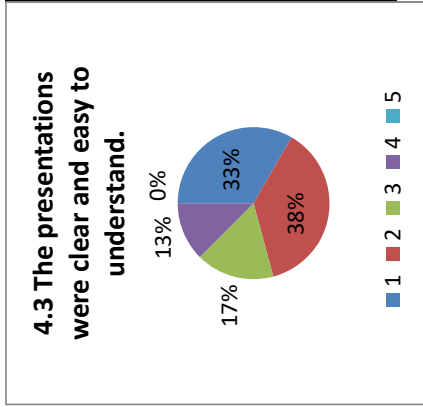
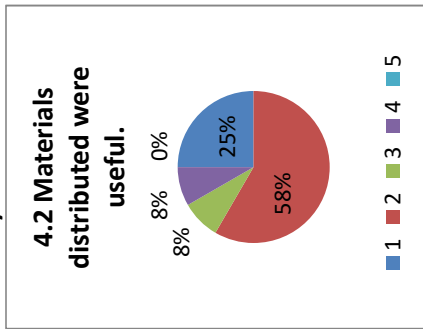
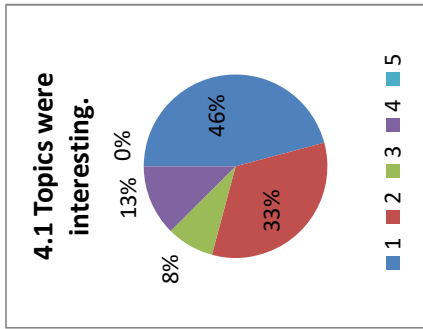
Strongly Disagree

Strongly Agree

Strongly Disagree

Comments

4. Presentation on ROW Management Activity and Plan



Comments

- Find the budget for the regular patrol works and Pole installation at missing places and establish the joint committee with local authorities to identify the problems at the dense or urban areas; and
- The presentation is a bit short. The action plan is not described clearly.

Strongly Agree

Strongly Disagree

Strongly Agree

Strongly Disagree

Strongly Agree

Strongly Disagree

Comments

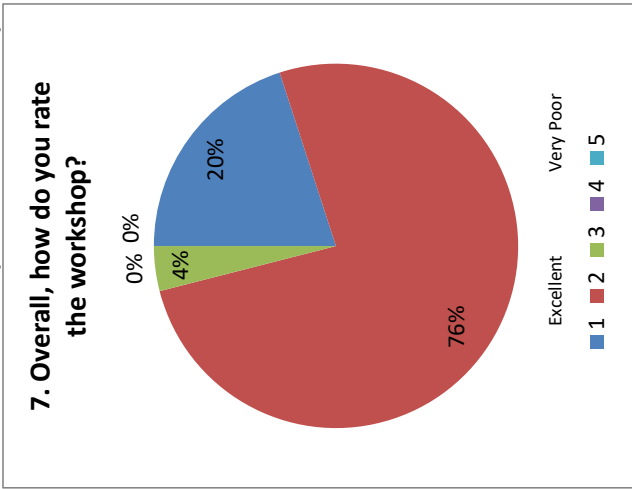
5. Presentation on Implementation of Field Survey (CSI) and Patrol (IEP)

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Comments
5.1 Topics were interesting.	4%	4%	30%	57%	
5.2 Materials distributed were useful.	0%	4%	26%	43%	
5.3 The presentations were clear and easy to understand.	4%	0%	35%	39%	

6. Workshop Organization

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	Comments
6.1 The Workshop met my expectations.	8%	4%	0%	52%	
6.2 Workshop was nicely organized.	4%	0%	16%	36%	
6.3 Interpretation for seminar was clear to understand.	0%	8%	21%	42%	
6.4 The time for reach presentation was	0%	4%	96%	0%	Too Short/Too Long
6.5 The time for discussion was	0%	0%	24%	76%	Too Short/Too Long

7. Overall, how do you rate the workshop?



8. What aspects of workshop can be improved for the next one 9. If you have any specific comments:

- Illegal Encroachment Prevention (IEP);
- Implementation of Field Survey and Patrol (IEP) and IEP;
- No need to improve; acceptable;
- Need to carefully control the time for each section;
- The documents should be translated into Khmers; and
- Presentation materials, opening or closing remarks and coordination (MC) should be in Khmers.

- should check the weather forecast to avoid the raining day;
- Document and lesson from this ROW Workshop is good but how about the implementation? Can you do it?;
- request to have this kind of knowledge transfer to all relevant institutes to widen the knowledge on ROW;
- Next workshop should be prepared for making better understanding and implementation; and
- In the App (Tablet), can we set the Alert Notification for patrol schedule on 2nd, 3rd or 4th Patrol? It can help the official to check the patrol schedule.



WORKSHOP FOR PRACTICE OF ROW MANAGEMENT SYSTEM

DISCUSSION MEMO

Date & Time :	August 30 th , 2019 from 8:30am to 4:00pm
Place	PHNOM PENH Hotel, Phnom Penh
Attendees :	Mr. Khoun Kompheak, Deputy Director, RID/MPWT Mr. Chea Samnang, Chief of ROW Office, RID/MPWT Mr. Hay Chandara, Deputy Chief of ROW Office, RID MPWT Ms. Eam Sokchea, Deputy Chief of Environment and Public Service Office, PID/MPWT And Other MPWT officials and DPWT officials from Kampong Speu, Koh Kong, Takeo, Kep, Kampot and Preah Vihear (see the attendant list in this memo)
Project Team :	Mr. Yamashita, Mr. Kumagai, Ms. Nomura, Ms. Sophy, Mr. Soheat, Mr. Luch, Mr. Sereyvuth and Mr. Samon
Agenda / Discussion Points :	- To train the DPWTs' Officials on ROW management System through the presentations from ROW TF members (MPWT's Officials); - To conduct the field practice for field survey and patrol.

1- Opening Remark by Mr. Khoun Kompheak, Deputy Director of RID, MPWT

2- Presentation on outline of ROW Management Methods by Mr. Chea Samnang

Comments, Questions and Answers:

- Question 1 from Mr. Kompheak:

based on the Order No.6 and Sub-decree No.197, there were updated or upgraded Provincial Roads to National Road 2-digits. So, the length of ROW moved from 20m both sides to 25m both sides. Are there any problems or complaints from people?

- Answer 1 by Mr. Chea Samnang:

We do have problem with people after some roads have been upgraded because some people have the hard title. It is difficult to solve since we have only the law on the update on the road but no solution. I think Takeo DPWT can share us their experiences.

- Added by Takeo DPWT:



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



For National Road No.2, we just install the ROW Poles. So far, we have no serious problem. However, we have some problems on National Road No.23 (before it was the provincial road with ROW length of 20m). To solve this misunderstanding, our officials have tried to explain the people that the road was upgraded and we explained them that we do not ask them to re-locate. We just install the ROW pole to set new boundary.

- Question 2 from Takeo DPWT:

Can you share any guidelines on Patrol for temporary building?

- Answer 2 by Mr. Chea Samnang:

Actually, this project has prepared the Guidelines on ROW Management; including the Patrol as well. Based on this Guidelines, All DPWTs will follow. Besides the guidelines, we will have form, Tablets for Patrol. DPWT can share information and store in Database in MPWT.

- Question 3 from Kep DPWT:

Resettlement along National Road No.33 was already done for 15m from the central line. However, people come to encroach by building the temporary structures within another 10m from the boundary of 15m. Can you share any solution or recommendation to solve this problem?

- Answer 3 by Mr. Chea Samnang: Did you report to the provincial office or local authority?

- Replies from Kep DPWT: Yes, we did report but no solution.

- Replies from Mr. Samnang: That is the problem because the provincial office and local authority ignore this matter. We are just DPWT officials, we have only right to explain the people but no right to pull-down the structure.

- Added by Mr. Kompheak: The compensation for 15m was for only within the COI (Corridor of Impact) because of the limited budget. We need to explain the people; especially the local authority to understand this matter. Because we lack of information sharing, we have organized the PCM to explain the people and local authority to understand the condition of ROW management.

- Question 4 from DPWT:

Because of the economic growth, some areas become crowded. Then, the ROW in urban areas is only 15m both sides from Central line. Related to this, I would like to ask whether we have any legal or official document to define the urban and non-urban areas.

- Answer 4 by Mr. Chea Samnang:



DPWT works closely with Provincial Department of Land Management, Urban Planning, Construction and Cadastral (PDLMUPCC). You need to ask them to show you the legal document proving the length of ROW in urban and non-urban areas. How can they say that this is the urban area! If it is really urban area. We need more space for Road due to the number of cars and other road utilities based on the technical standard.

- Replies added by Mr. Kompheak and Mr. Saray:

MPWT has submitted letter to MoI to ask about the definition of urban and non-urban areas. However, we have not yet received any clear answer. So, as Mr. Samnang already explained based on the technical standard, urban areas should need more space for road construction and utilities.

3- Presentation on Field Survey for Current Status Identification (CSI) by Mr. Khai Saray:

Comments, Questions and Answers:

- Question 1 from DPWT:

Based on the Drone flight with the offset of 30m both sides, then there was field survey, so I think there might be some errors with the distance?

- Answer 1 by Mr. Saray:

In order to correct the coordinate, we use GCP (2 GCPs for one flight) and process the image.

- Added by Mr. Hay Chandara:

CSI is just the inventory on ROW but the flight of each photo has the Geometric information. We corrected the coordinate with GPS from GCP then during the image processing, we overlapped the photos for 80%. Then, we have only very small bias/error in our data. Additionally, we conducted the field survey to update our CSI data. In the next presentation, we will explain the Field Survey for the Patrol (IEP) to update the information.

- Added by Mr. Kompheak:

What we have is the base map as evidence to deal with illegal encroachment. Moreover, based on this, we can draft estimate the resettlement cost. We need to update this database with the help from our DPWT.

- Added by Mr. Saray:



If CSI and IEP can be implemented, we can smoothly manage ROW with the cooperation from DPWTs.

4- Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches by Mr. Kaing Theara:

Comments, Questions and Answers:

- **Added from Mr. Kompheak:** There are two types of IEP: Soft and hard approaches. These two approaches should be implemented together. CESCOR Project mainly implements the soft approaches. However, project also applies the hard approaches (IEP) at Chrey Bak as the sample. If we have our own budget, we can follow this model at other places.

- **Added by Mr. Kompheak:** Explained again on the IEP Method Classification. Do you have other ideas to add?

- **Replies from Mr. Samnang:** I think when we talk about the prevention, we always say we do not have money. But we always have money for the resettlement. Actually, if we can prevent the encroachment, we can save a lot of money. For example, if we apply IEP fence, we can get (1) good safety for people; and (2) no resettlement cost.

- **Added by DPWT:** For IEP Fence, I would like to raise the case from one Farm. That farm grew the bamboo tree as boundary of ROW because it is cheap than installing the fence. However, after some times, those bamboo trees block the access roads to other people's houses. So, I think growing Tree is better.

- **Added by Mr. Samnang:** I think growing bamboo tree is better (it is cheap and people can benefit from the bamboo tree). However, we need to be flexible based on the location.

5- Presentation on ROW Management Activity and Plan by Mr. Hay Chandara:

Comments, Questions and Answers:

- **Comment from Soheat:** I would like to take the chance to reply to our participants who raised the question about the ROW management plan. This presentation explained the Budget Plan for ROW Management for the future.



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



- **Comment from Mr. Sannang:** Our DPWT can prepare the proposal to ask for Budget on ROW management for 1st year, 2nd year or 5th year. Our MPWT also has 3-year moving plan. The project can implement CSI and IEP only for National Road No.5. And this workshop is to transfer knowledge from MPWT and DPWT. Then, we need to work in the future.



6- Closing Remark by Mr. Khoun Kompheak, Deputy Director of RID, MPWT

****Afternoon session:**

1- Comprehensive Test:

2- Presentation on Implementation of Field Survey (CSI) and Patrol (IEP) by JICA Team (Mr. Bun SereyVuth):

Question and Answer:

After presentation, there is a practice on desk of participants. Participants need to add update CSI point, add new CSI point and Update CSI Point (IEP). Assistants assist the participants directly.

- **Q1:** For the new point, who will approve those points?

- **A1:** the updated points will be approved by Server in MPWT, they will check the photo, point and the code before approval.

- **Q2:** Will the photo size be reduced after we upload it to the system?

- **A2:** No, the original size will be kept. The quality and size of photo depends on the device. The App can work offline; so, it is okay with the internet connection, the photo and data will be automatically uploaded.



- **Q3:** The information will be stored in Tablet during offline. So, how can we send the data to server when we have an internet connection?

- **A3:** With the internet connection, there will be button “update or upload” then we can click on it. All data will be sent and checked by server in MPWT.

- **Q4:** There is no App in the Play Store. So, if we have an available app on Smart Phone (some smart phone has better function than Tablet). If MPWT can share us the ID and Password, we can use on our smart phone.

- **A4 from Mr. Kompheak:** Actually, MPWT can share the ID and Password to DPWT with the requested numbers. So, we can know who will use the App or update the information. Therefore, those who have ID and Password will be responsible for any action.

- **Replies added by Mr. Socheat:** Additionally, even you can use on your smart phone, the MPWT allows you to access only to specific Block.

- **Q5:** can we connect to Desktop or transfer data from Tablet to Desktop? Because it is easy to check or make report.

- **A5:** We cannot transfer data to personal computer. After we upload or update, the data will be stored in Database. If you want to check the data, you just can log-in and check data. If you transfer data to personal desktop, you can see only the number no specific information. Regarding this matter, we have never thought of it. However, MPWT can allow the scope of access to database to DPWT based on the discussion.

- **Replies added by Mr. Samnang:** We have also proposed to developers to have function to get the report from Database. As we discussed yesterday, we also want to know the distance of encroachment from central line. We also want to get this information for making report. From database, we can know the size of building although it is not really exact but it can help the draft estimation for the resettlement.

3- Practice for Field Survey and Patrol at Phnom Penh Hotel:

- Demonstration on IEP (Patrol) by using Tablet by Mr. Socheat and Mr. Vuth.

- Then, explained another form (IEP_Patrol) by Mr. Socheat.

- **Added by Mr. Kompheak:** Tablet can store the data for long time, Paper is difficult to be found if the person in charge has gone. However, we still need the paper works to support our works. Based on the RMD and Guidelines that we will have, we will apply to all DPWTs. We need your ideas to improve our system and guidelines.



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



- **Added by Mr. Chea Samnang:** This workshop is also kind of training. All the works explained here will become your works (DPWT). So, if you can share your works, it will be good and proper for your works.
- **Question from DPWT:** CSI recorded the encroaching buildings, how about the advertising signboard? To install the big signboard, need to get the approval from Provincial hall. So, what kind of signboard approved by DPWT?
- **Answer by Mr. Chea Samnang:** Based on the law, all signboards on National Roads need the approval from MPWT or DPWT but Provincial Office now takes this work because we have not yet had the Joint Prakas on ROW Usage. However, if the signboards on roads in city are under the local authority's permission.
- **Question from DPWT:** So, on the Tablet, can we add another option for "small signboard" such beer signboards etc.?
- **Answer by Mr. Chea Samnang:** We can add on the Paper Form but not to server. It is difficult. Or DPWT can request to provincial hall to remove those beer advertising signboards.
- **Question from DPWT:** For the IEP ROW Permission, people never ask to DPWT; also, we do not have any form. People always get oral permission from local authority. But no one check the technical works during the construction.
- **Answer from Mr. Chea Samnang:** DPWT needs to talk with local authority to follow the road law and follow the technical works.





WORKSHOP FOR PRACTICE OF ROW MANAGEMENT SYSTEM

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

30TH AUGUST, 2019

PHNOM PENH HOTEL, PHNOM PENH



FOR MORE INFORMATION CONTACT: OFFICE +855(0)61-960-213

AGENDA

Workshop for Practice of ROW Management System The Project for Capacity Enhancement on Environmental and Social Considerations in Implementing Agency in Road Sector in Cambodia (CESCoR)

PHNOM PENH Hotel, Phnom Penh, 30th August 2019

Target Participants: DPWTs in Kampong Speu, Takeo, Kampot, Kep, Sihanoukville and Koh Kong

Time	Program	Content
08:30-08:45	Registration	
08:45-08:50	Cambodian National Anthem	
08:50-08:55	Opening Remarks Mr. Khoun Kompheak, Deputy Director, RID, MPWT	
08:55-09:25	Presentation on Outline for ROW Management Methods Mr. CHEA Samnang, Office Chief of ROW, RID, MPWT	<ol style="list-style-type: none"> 1. Legal Framework, 2. Structure of CSI (RMD, RMM, UAV and Field survey), 3. Structure of IEP (Hard and Soft Approaches)
09:25-10:10	Presentation on Field Survey for Current Status Identification (CSI) Mr. KHAI Saray, Deputy Office Chief of ROW, RID, MPWT	<ol style="list-style-type: none"> 1. Outline of Field Survey 2. Detailed Procedure for Field survey 3. Data collection and utilization by survey result (data analysis)
10:10-10:25	Coffee Break	
10:25-11:10	Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches Mr. KAING Theara, Official, RID, MPWT	<ol style="list-style-type: none"> 1. Type of IEP approaches (Soft and Hard approach including typical cross section for future development) 2. Procedure for Soft Approaches such as Conduct PCM, Patrol and Provide ROW usage permission
11:10-11:40	Presentation on ROW Management Activity and Plan Mr. HAY Chandara, Deputy Office Chief of ROW, RID, MPWT	<ol style="list-style-type: none"> 1. Priority Activities (CSI, PCM and ROW Pole Installation) 2. Future Development Plan
11:40-11:55	Q&A Session	
11:55-12:00	Closing Remarks Mr. Khoun Kompheak, Deputy Director, RID, MPWT	
12:00-13:30	Luncheon	
13:30-14:00	Comprehension Test for Participants	
14:00-14:30	Presentation on Implementation of Field Survey (CSI) and Patrol (IEP) JICA Project Team	<ol style="list-style-type: none"> 1. Procedures for Field Survey 2. Procedures for Patrol 3. How to use Tablet App for Field survey and Patrol
14:30-15:00	Result of Comprehension Test	
15:00-16:30	Field Practice for Field Survey and Patrol at PHNOM PENH Hotel, JICA Project Team	

Note: All Presentations will be English, verbal speech in Khmer



WORKSHOP FOR PRACTICE OF ROW MANAGEMENT SYSTEM

DISCUSSION MEMO

Date & Time:	August 30 th , 2019 from 8:30am to 4:00pm
Place	PHNOM PENH Hotel, Phnom Penh
Attendees:	Mr. Khoun Kompheak, Deputy Director, RID/MPWT Mr. Chea Samnang, Chief of ROW Office, RID/MPWT Mr. Hay Chandara, Deputy Chief of ROW Office, RID MPWT Ms. Eam Sokchea, Deputy Chief of Environment and Public Service Office, PID/MPWT And Other MPWT officials and DPWT officials from Kampong Speu, Koh Kong, Takeo, Kep, Kampot and Preah Vihear (see the attendant list in this memo)
Project Team:	Mr. Yamashita, Mr. Kumagai, Ms. Nomura, Ms. Sophy, Mr. Soheat, Mr. Luch, Mr. Sereyvuth and Mr. Samon
Agenda / Discussion Points:	- To train the DPWTs' Officials on ROW management System through the presentations from ROW TF members (MPWT's Officials); - To conduct the field practice for field survey and patrol.

1- Opening Remark by Mr. Khoun Kompheak, Deputy Director of RID, MPWT

2- Presentation on outline of ROW Management Methods by Mr. Chea Samnang

Comments, Questions and Answers:

- Question 1 from Mr. Kompheak:

based on the Order No.6 and Sub-decree No.197, there were updated or upgraded Provincial Roads to National Road 2-digits. So, the length of ROW moved from 20m both sides to 25m both sides. Are there any problems or complaints from people?

- Answer 1 by Mr. Chea Samnang:

We do have problem with people after some roads have been upgraded because some people have the hard title. It is difficult to solve since we have only the law on the update on the road but no solution. I think Takeo DPWT can share us their experiences.

- Added by Takeo DPWT:



For National Road No.2, we just install the ROW Poles. So far, we have no serious problem. However, we have some problems on National Road No.23 (before it was the provincial road with ROW length of 20m). To solve this misunderstanding, our officials have tried to explain the people that the road was upgraded and we explained them that we do not ask them to re-locate. We just install the ROW pole to set new boundary.

- Question 2 from Takeo DPWT:

Can you share any guidelines on Patrol for temporary building?

- Answer 2 by Mr. Chea Samnang:

Actually, this project has prepared the Guidelines on ROW Management; including the Patrol as well. Based on this Guidelines, All DPWTs will follow. Besides the guidelines, we will have form, Tablets for Patrol. DPWT can share information and store in Database in MPWT.

- Question 3 from Kep DPWT:

Resettlement along National Road No.33 was already done for 15m from the central line. However, people come to encroach by building the temporary structures within another 10m from the boundary of 15m. Can you share any solution or recommendation to solve this problem?

- Answer 3 by Mr. Chea Samnang: Did you report to the provincial office or local authority?

- Replies from Kep DPWT: Yes, we did report but no solution.

- Replies from Mr. Samnang: That is the problem because the provincial office and local authority ignore this matter. We are just DPWT officials, we have only right to explain the people but no right to pull-down the structure.

- Added by Mr. Kompheak: The compensation for 15m was for only within the COI (Corridor of Impact) because of the limited budget. We need to explain the people; especially the local authority to understand this matter. Because we lack of information sharing, we have organized the PCM to explain the people and local authority to understand the condition of ROW management.

- Question 4 from DPWT:

Because of the economic growth, some areas become crowded. Then, the ROW in urban areas is only 15m both sides from Central line. Related to this, I would like to ask whether we have any legal or official document to define the urban and non-urban areas.

- Answer 4 by Mr. Chea Samnang:



DPWT works closely with Provincial Department of Land Management, Urban Planning, Construction and Cadastral (PDLMUPCC). You need to ask them to show you the legal document proving the length of ROW in urban and non-urban areas. How can they say that this is the urban area! If it is really urban area. We need more space for Road due to the number of cars and other road utilities based on the technical standard.

- Replies added by Mr. Kompheak and Mr. Saray:

MPWT has submitted letter to MoI to ask about the definition of urban and non-urban areas. However, we have not yet received any clear answer. So, as Mr. Samnang already explained based on the technical standard, urban areas should need more space for road construction and utilities.

3- Presentation on Field Survey for Current Status Identification (CSI) by Mr. Khai Saray:

Comments, Questions and Answers:

- Question 1 from DPWT:

Based on the Drone flight with the offset of 30m both sides, then there was field survey, so I think there might be some errors with the distance?

- Answer 1 by Mr. Saray:

In order to correct the coordinate, we use GCP (2 GCPs for one flight) and process the image.

- Added by Mr. Hay Chandara:

CSI is just the inventory on ROW but the flight of each photo has the Geometric information. We corrected the coordinate with GPS from GCP then during the image processing, we overlapped the photos for 80%. Then, we have only very small bias/error in our data. Additionally, we conducted the field survey to update our CSI data. In the next presentation, we will explain the Field Survey for the Patrol (IEP) to update the information.

- Added by Mr. Kompheak:

What we have is the base map as evidence to deal with illegal encroachment. Moreover, based on this, we can drafty estimate the resettlement cost. We need to update this database with the help from our DPWT.

- Added by Mr. Saray:



If CSI and IEP can be implemented, we can smoothly manage ROW with the cooperation from DPWTs.

4- Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches by Mr. Kaing Theara:

Comments, Questions and Answers:

- **Added from Mr. Kompheak:** There are two types of IEP: Soft and hard approaches. These two approaches should be implemented together. CESCoR Project mainly implements the soft approaches. However, project also applies the hard approaches (IEP) at Chrey Bak as the sample. If we have our own budget, we can follow this model at other places.

- **Added by Mr. Kompheak:** Explained again on the IEP Method Classification. Do you have other ideas to add?

- **Replies from Mr. Samnang:** I think when we talk about the prevention, we always say we do not have money. But we always have money for the resettlement. Actually, if we can prevent the encroachment, we can save a lot of money. For example, if we apply IEP fence, we can get (1) good safety for people; and (2) no resettlement cost.

- **Added by DPWT:** For IEP Fence, I would like to raise the case from one Farm. That farm grew the bamboo tree as boundary of ROW because it is cheap than installing the fence. However, after some times, those bamboo trees block the access roads to other people’s houses. So, I think growing Tree is better.

- **Added by Mr. Samnang:** I think growing bamboo tree is better (it is cheap and people can benefit from the bamboo tree). However, we need to be flexible based on the location.

5- Presentation on ROW Management Activity and Plan by Mr. Hay Chandara:

Comments, Questions and Answers:

- **Comment from Soheat:** I would like to take the chance to reply to our participants who raised the question about the ROW management plan. This presentation explained the Budget Plan for ROW Management for the future.



- **Comment from Mr. Samnang:** Our DPWT can prepare the proposal to ask for Budget on ROW management for 1st year, 2nd year or 5th year. Our MPWT also has 3-year moving plan. The project can implement CSI and IEP only for National Road No.5. And this workshop is to transfer knowledge from MPWT and DPWT. Then, we need to work in the future.



6- Closing Remark by Mr. Khoun Kompheak, Deputy Director of RID, MPWT

****Afternoon session:**

1- Comprehensive Test:

2- Presentation on Implementation of Field Survey (CSI) and Patrol (IEP) by JICA Team (Mr. Bun SereyVuth):

Question and Answer:

After presentation, there is a practice on desk of participants. Participants need to add update CSI point, add new CSI point and Update CSI Point (IEP). Assistants assist the participants directly.

- **Q1:** For the new point, who will approve those points?
- **A1:** the updated points will be approved by Server in MPWT, they will check the photo, point and the code before approval.
- **Q2:** Will the photo size be reduced after we upload it to the system?
- **A2:** No, the original size will be kept. The quality and size of photo depends on the device. The App can work offline; so, it is okay with the internet connection, the photo and data will be automatically uploaded.



- **Q3:** The information will be stored in Tablet during offline. So, how can we send the data to server when we have an internet connection?

- **A3:** With the internet connection, there will be button “update or upload” then we can click on it. All data will be sent and checked by server in MPWT.

- **Q4:** There is no App in the Play Store. So, if we have an available app on Smart Phone (some smart phone has better function than Tablet). If MPWT can share us the ID and Password, we can use on our smart phone.

- **A4 from Mr. Kompheak:** Actually, MPWT can share the ID and Password to DPWT with the requested numbers. So, we can know who will use the App or update the information. Therefore, those who have ID and Password will be responsible for any action.

- **Replies added by Mr. Socheat:** Additionally, even you can use on your smart phone, the MPWT allows you to access only to specific Block.

- **Q5:** can we connect to Desktop or transfer data from Tablet to Desktop? Because it is easy to check or make report.

- **A5:** We cannot transfer data to personal computer. After we upload or update, the data will be stored in Database. If you want to check the data, you just can log-in and check data. If you transfer data to personal desktop, you can see only the number no specific information. Regarding this matter, we have never thought of it. However, MPWT can allow the scope of access to database to DPWT based on the discussion.

- **Replies added by Mr. Samnang:** We have also proposed to developers to have function to get the report from Database. As we discussed yesterday, we also want to know the distance of encroachment from central line. We also want to get this information for making report. From database, we can know the size of building although it is not really exact but it can help the draft estimation for the resettlement.

3- Practice for Field Survey and Patrol at Phnom Penh Hotel:

- Demonstration on IEP (Patrol) by using Tablet by Mr. Socheat and Mr. Vuth.

- Then, explained another form (IEP_Patrol) by Mr. Socheat.

- **Added by Mr. Kompheak:** Tablet can store the data for long time, Paper is difficult to be found if the person in charge has gone. However, we still need the paper works to support our works. Based on the RMD and Guidelines that we will have, we will apply to all DPWTs. We need your ideas to improve our system and guidelines.



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



- **Added by Mr. Chea Samnang:** This workshop is also kind of training. All the works explained here will become your works (DPWT). So, if you can share your works, it will be good and proper for your works.
- **Question from DPWT:** CSI recorded the encroaching buildings, how about the advertising signboard? To install the big signboard, need to get the approval from Provincial hall. So, what kind of signboard approved by DPWT?
- **Answer by Mr. Chea Samnang:** Based on the law, all signboards on National Roads need the approval from MPWT or DPWT but Provincial Office now takes this work because we have not yet had the Joint Prakas on ROW Usage. However, if the signboards on roads in city are under the local authority’s permission.
- **Question from DPWT:** So, on the Tablet, can we add another option for “small signboard” such beer signboards etc.?
- **Answer by Mr. Chea Samnang:** We can add on the Paper Form but not to server. It is difficult. Or DPWT can request to provincial hall to remove those beer advertising signboards.
- **Question from DPWT:** For the IEP ROW Permission, people never ask to DPWT; also, we do not have any form. People always get oral permission from local authority. But no one check the technical works during the construction.
- **Answer from Mr. Chea Samnang:** DPWT needs to talk with local authority to follow the road law and follow the technical works.





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



Date: 30th August 2019

Time: 8:30am-16:00pm

Location: at Phnom Penh Hotel

Topic: The Workshop for Practice of ROW Management System

Attendance List

No	Name	Position	Department/Ministry	Phone
MPWT-RID				
1	Mr. Khuon Kompheak	Deputy Director	RID/MPWT	
2	Mr. Chea Samnang	Chief of ROW Office	RID/MPWT	
3	Mr. Hay Chandara	Deputy Chief of ROW Office	RID/MPWT	
4	Mr. Khai Saray	Deputy Chief of ROW Office	RID/MPWT	
5	Mr. Sokun Piseth	Deputy Chief of Office	RID/MPWT	
6	Mr. Kaing Theara	Officer	RID/MPWT	
7	Mr. Nob Keilarith	Deputy Chief of Office	RID/MPWT	
8	Mr. Sao Premarak	Deputy Chief of Office	RID/MPWT	
9	Ms. Touch Kimsan	Officer	RID/MPWT	
MPWT-PID				
10	Ms. Eam Sokchea	Deputy Chief of Office	PID/MPWT	
11	Mr. Yeam Vesna	Officer	PID/MPWT	
MPWT-ICD				
12	Mr. Peang Samoeun	Chief Officer	ICD/MPWT	
DPWT-Kampong Speu Province				
13	Mr. Reth Ratanak	Deputy Chief of Office	MPWT	
14	Mr. Rueng Narot	Officer	MPWT	
15	Mr. Chan Virak	Officer	MPWT	
DPWT-Takeo Province				
16	Mr. Chhim Chanchhaya	Deputy Chief of Order Office	DPWT	
17	Mr. Oum Chanthong	Chief of Technical Office	DPWT	
18	Mr. Chea Hong	Deputy Director	DPWT	
DPWT-Kampot Province				



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



19	Mr. Lim Tara	Deputy Chief of Office	DPWT	
20	Mr. Yi Hokleang	Officer	DPWT	
21	Mr. Kong Raksmeay	Officer	DPWT	
DPWT-Kep Province				
22	Mr. Lim Chatong	Chief Officer	DPWT	
23	Mr. Din Virak	Chief of Technical Office	DPWT	
24	Mr. To Tara	Technical Officer	DPWT	
DPWT-Koh Kong Province				
25	Mr. Tay Chhaiya	Officer	DPWT	
26	Mr. Kheng Seiha	Officer	DPWT	
27	Mr. Va Vantith	Officer	DPWT	
DPWT-Preah Vihear Province				
28	Mr. Ry Sotheary	Deputy Chief of Office	DPWT	
JICA Project Team_CESCoR				
29	Mr. Akira Yamashita	Team Leader	JICA Project Team	
30	Mr. Kumagai Takahiro	Project Coordinator	JICA Project Team	
31	Ms. Sakiko Nomura	Intern	JICA Project Team	
32	Ms. Ches Sophy	Project Assistant	JICA Project Team	
33	Mr. Penh Socheat	Technical Assistant	JICA Project Team	
34	Mr. Bun Sereyvuth	Project Assistant	JICA Project Team	
35	Mr. Mut Samon	Assistant	JICA Project Team	
36	Mr. Preah Loch	Assistant	JICA Project Team	

CESCOr PROJECT INTRODUCTION

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

Table of Contents

- CESCOr Project Introduction
- ROW Management
- Pilot Project

CESCOr PROJECT INTRODUCTION

PROJECT OUTPUTS

Project Period:

The project has been funded from JICA committed for the period from Jan. 2017 to Dec. 2019.

Project Goal:

Environmental and Social Consideration (ESC) in road sector is implemented properly by MPWT.

Project Purpose:

Capacity of MPWT officials on ESC is enhanced through applying Road Environmental Guidelines (REG) and Road Management System (RMS).

PROJECT OUTLINE

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

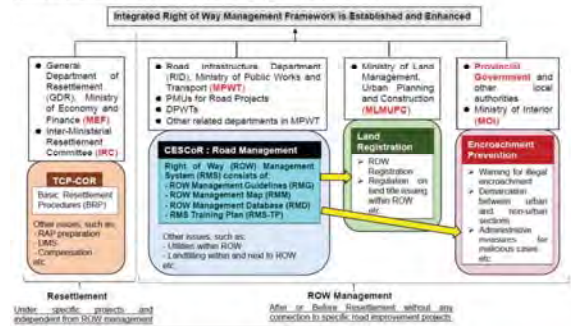
Note: REG: Road Environment Guideline, RMS: ROW Management System, EIA: Environmental Impact Assessment, EMP: Environmental Management Plan

OUTLINE

Output 3:	Implementation framework of SC related to ROW management is strengthened by establishing RMS
PURPOSE:	Capacity of Social Considerations (SC) required for ROW management is strengthened as a component of CESCOr Project, funded by JICA
ACTIVITY:	<ol style="list-style-type: none"> 1) Create RMG (ROW Management Guideline) 2) Create RMM/RMD as a result of Pilot Project 3) Create RMS-TP and Capacity building training to MPWT and DPWT
METHOD:	Specify a area to implement a pilot project to study the feasibility of the system. The system will be applied to NR5 has been selected for the rapid development. Target Area along National Road No.5 in four Provinces:
TARGET AREA:	<ol style="list-style-type: none"> 1) KAMPONG CHHNANG Province 2) PURSAT Province 3) BATTAMBANG Province 4) BANTEAY MEANCHHEY Province

INTEGRATED ROW MANAGEMENT FRAMEWORK

Chart: ROW Management and Target Area of CESCOr (including activities on EIA and EMP)



ROW MANAGEMENT

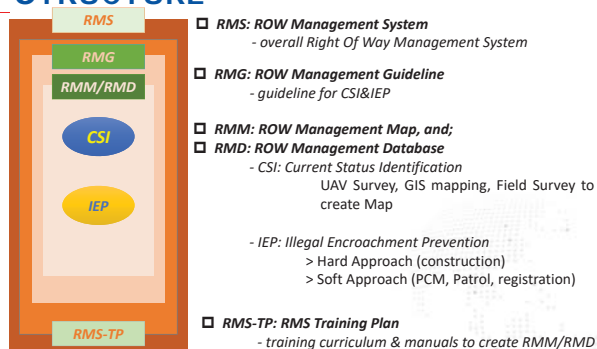
LEGAL FRAMEWORK FOR RIGHT OF WAY(ROW)

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

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)	
2-digits Number National Roads		25 m(※3)	25 m(※3)
Provincial roads		20 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

STRUCTURE



CSI ROLE

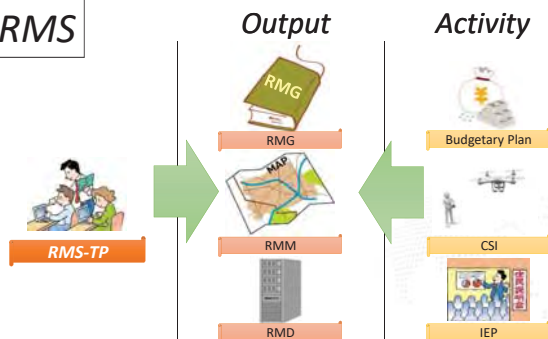
ITEM		MPWT	DPWT	LOCAL AUTHORITY
KICKOFF MTG	Arrangement	✓	✓	
	Implementation	✓	✓	✓
	Flight permission	✓	✓	✓
UAV SURVEY	Flight plan	✓		
	UAV survey	✓	✓	
	Supervision (for outsourcing)	✓		
OFFICE WORK	Image processing	✓		
	Mapping (data production)	✓		
FIELD SURVEY	FS permission	✓	✓	✓
	Field survey	✓	✓	
	Supervision	✓		
GIS	data finalization	✓		

IEP ROLE

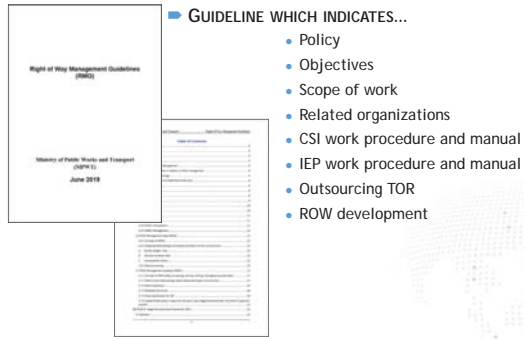
ITEM		MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification		✓				
Raise awareness	1) PCM	✓	✓	✓		
	2) High school / University	✓				✓
	3) Local government office	✓	✓	✓	✓	
Monitoring & intervention	1) Regular patrol	✓	✓	✓		
	2) Collaborating w/ local authorities	✓	✓	✓		
	3) Appealing to court	✓	✓	✓		✓
Permission & Registration	1) ROW permit	✓	✓	✓		
	2) ROW registration	✓	✓	✓	✓	
	3) Access road permit	✓	✓			✓
Supervision	1) Record of "raising awareness"	✓	✓			
	2) Record of "Monitoring"	✓	✓			
	3) Record of "Permission"	✓	✓			

CONCEPT

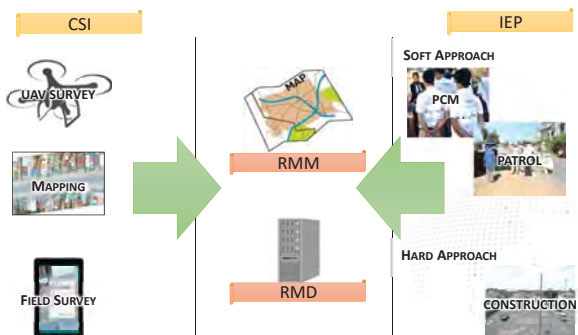
RMS



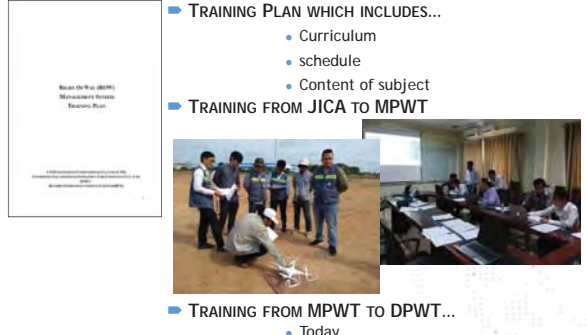
RMG



RMM & RMD



RMS-TP AND TRAINING

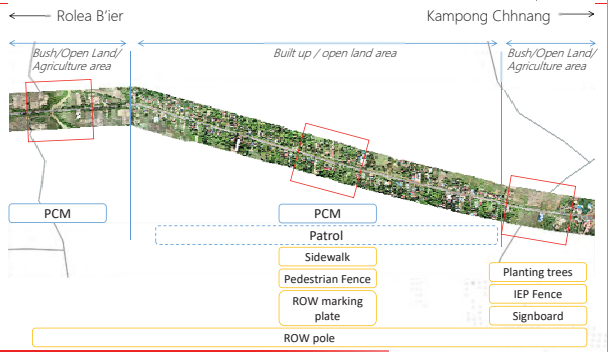


PILOT PROJECT



17

IEP TARGET AREA



CSI TARGET AREA



IEP WORK PROGRESS

		APRIL	MAY	JUNE	JULY	AUG	SEP
SOFT APPROACH	PCM 1	●					
	PCM 2						
HARD APPROACH	K/O MTG	●					
	Construction						



CSI WORK PROGRESS

PROGRESS CHART

- UAV Survey** 100%: 250 flights
- Image Processing** 100%: 36,600,000m²
- Data Production** 100%: 33625 points
- Field Survey** 100%: 25248 ground photos
- Data Finalization** 60%: correcting errors...

ROW MANAGEMENT MAP (RMM):
To Identify Encroachment into ROW on Map

ROW MANAGEMENT DATABASE (RMD):
To show Detailed Information of Encroachment
To count Encroachments for Classification

IEP TARGET AREA



THANK YOU! សូមអរគុណ

23

FIELD SURVEY FOR CSI (CURRENT STATUS IDENTIFICATION)

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

OUTLINE

2

GENERAL

- Current Status Identification (CSI) focuses on data collection related to situation of right of way along national roads and provincial roads across the country in order to creating right of way maps and database as baseline for effective right of way management.
- The purpose of CSI is to study on a current situation of ROW management and developing a ROW current situation map as a baseline so that appropriate measures can be applied for effective ROW management and encroachment prevention.
- The CSI work covers on all national roads under management of MPWT. A primary focus for the CSI is 1-digit national roads of which information is to be compiled on a ROW management map. After the completion of the map for the 1-digit national roads, 2-digit national roads will be targeted.

ORGANIZATION

Main contents of CSI are:

- 1) UAV survey,
- 2) data processing and
- 3) field survey, which is consisted data processing for Map and preparing survey sheet.

RID & DPWT should understand roles and collaborate with each organization to collect basic information through the surveys.

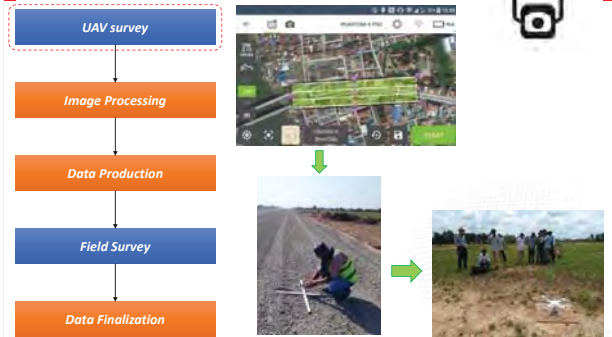
CSI WORK CONTENTS

Kick-off Meeting

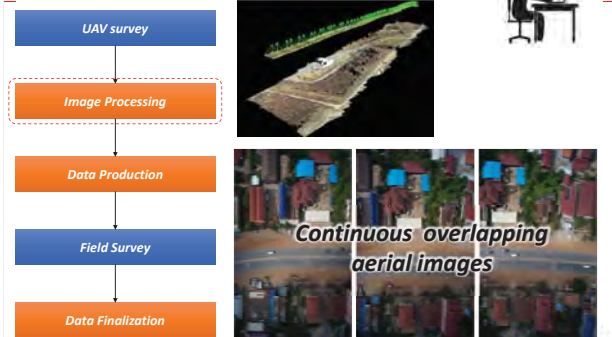
- To explain the work purpose, content and schedule to the local authorities.



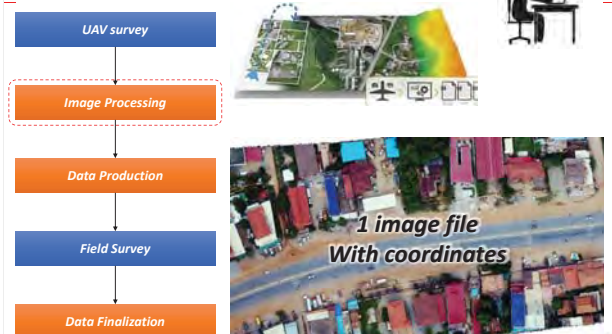
CSI WORK CONTENTS



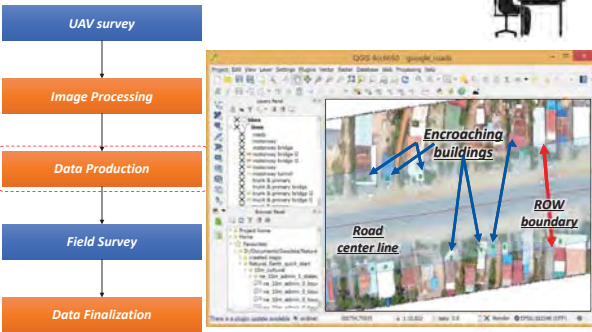
CSI WORK CONTENTS



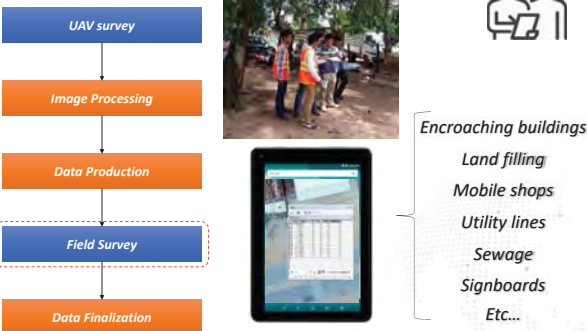
CSI WORK CONTENTS



CSI WORK CONTENTS



CSI WORK CONTENTS



CSI WORK CONTENTS



CSI ROLE

	ITEM	MPWT	DPWT	LOCAL AUTHORITY
KICKOFF MTG	Arrangement	✓	✓	
	Implementation	✓	✓	✓
	Flight permission	✓	✓	✓
UAV SURVEY	Flight plan	✓		
	UAV survey	✓	✓	
	Supervision (for outsourcing)	✓		Support
OFFICE WORK	Image processing	✓		
	Mapping (data production)	✓		
FIELD SURVEY	FS permission	✓	✓	✓
	Field survey	✓	✓	
	Supervision	✓		
GIS	data finalization	✓		

PREPARATION FOR FIELD SURVEY

PERMISSIONS - SAMPLE -

Request from
JICA project to MPWT

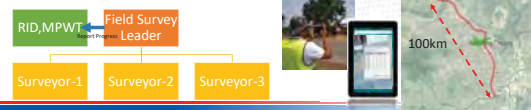
Request for
Drone survey from MPWT

Permission from
Provincial Office

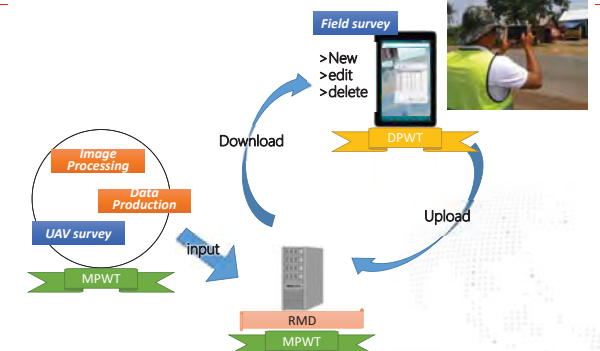
SURVEY TEAM ARRANGEMENT

About team arrangement for Field Survey, the assumption has been considered based on the result of pilot project.

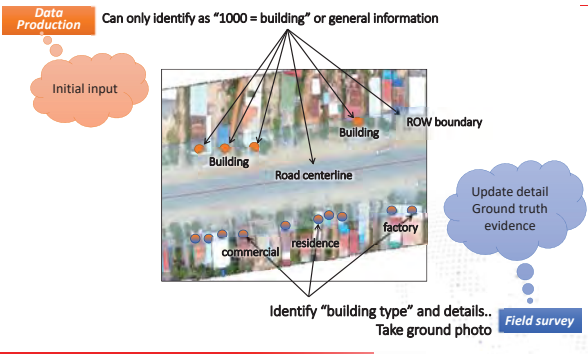
- Field Survey Leader: **1 person** will be assigned to manage Field Survey Team from MPWT or DPWT.
- Field Surveyors: **3 persons** for 1 team will be assigned to implement Field Survey from DPWT. The team could complete 100km within 3 months.
- Team arrangement could be considered depend on scale and priority of road improvement project.



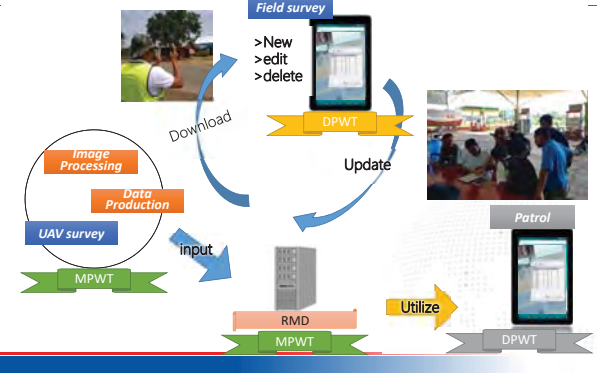
SYSTEM



CONCEPT



UTILIZATION

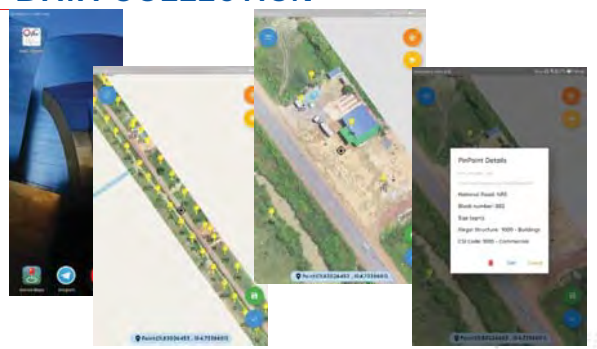


CSI DATA COLLECTION LIST

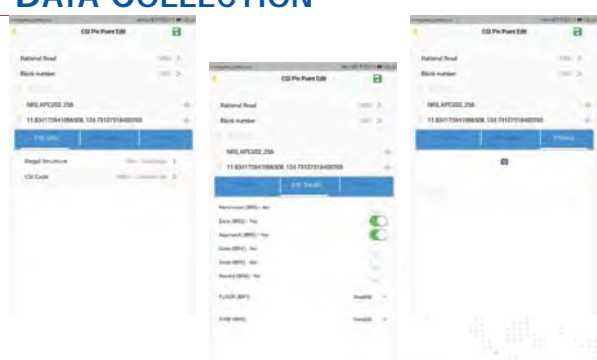
Data Production	Field Survey																																																																																																																																																																																																								
<p>CSI point data code list</p> <table border="1"> <tr><td>1000</td><td>Building</td></tr> <tr><td>6000</td><td>City</td></tr> <tr><td>6100</td><td>1st digit NR</td></tr> <tr><td>6110</td><td>1st digit NR Bypass</td></tr> <tr><td>6200</td><td>2nd digit NR</td></tr> <tr><td>6210</td><td>2nd digit NR Bypass</td></tr> <tr><td>6300</td><td>3rd digit NR</td></tr> <tr><td>6310</td><td>3rd digit NR Bypass</td></tr> <tr><td>6999</td><td>Other</td></tr> <tr><td>8000</td><td>NO USE</td></tr> <tr><td>8001</td><td>Flight block</td></tr> <tr><td>8002</td><td>Station block</td></tr> <tr><td>8003</td><td>ROW boundary</td></tr> <tr><td>8004</td><td>CDI boundary</td></tr> <tr><td>8500</td><td>Commune boundary</td></tr> <tr><td>8510</td><td>Province boundary</td></tr> <tr><td>8511</td><td>International boundary</td></tr> <tr><td>8999</td><td>Other</td></tr> </table> <p>CSI line & area data code list</p> <table border="1"> <tr><td>1000</td><td>Residence</td></tr> <tr><td>1000</td><td>Residence/Commercial</td></tr> <tr><td>1000</td><td>Commercial</td></tr> <tr><td>1000</td><td>Shed</td></tr> <tr><td>1000</td><td>Temporary shop</td></tr> <tr><td>1000</td><td>Building under construction</td></tr> <tr><td>1000</td><td>Factory</td></tr> <tr><td>1000</td><td>Petro station</td></tr> <tr><td>1000</td><td>Public office</td></tr> <tr><td>1010</td><td>School public</td></tr> <tr><td>1010</td><td>School private</td></tr> <tr><td>1010</td><td>Pagoda</td></tr> <tr><td>1010</td><td>Health center</td></tr> <tr><td>1010</td><td>Mobile cart</td></tr> <tr><td>1999</td><td>Other</td></tr> <tr><td>2000</td><td>Approach to building</td></tr> <tr><td>2000</td><td>Access Road</td></tr> <tr><td>2000</td><td>Land filling</td></tr> <tr><td>2000</td><td>Open Area</td></tr> <tr><td>2000</td><td>Parking</td></tr> <tr><td>2999</td><td>Other</td></tr> <tr><td>3100</td><td>Signboard public</td></tr> <tr><td>3110</td><td>Signboard private</td></tr> <tr><td>3200</td><td>Street Light</td></tr> <tr><td>3300</td><td>Pylon L</td></tr> <tr><td>3310</td><td>Pylon R</td></tr> <tr><td>3400</td><td>Cemetery</td></tr> <tr><td>3500</td><td>Private drainage</td></tr> <tr><td>3600</td><td>Well</td></tr> <tr><td>3700</td><td>KM post</td></tr> <tr><td>3800</td><td>ROW pole</td></tr> <tr><td>3910</td><td>CP pole</td></tr> <tr><td>3900</td><td>Control point (GCP)</td></tr> <tr><td>3910</td><td>Benchmark (BM)</td></tr> <tr><td>3999</td><td>Other</td></tr> <tr><td>4000</td><td>Post in remarks</td></tr> <tr><td>4599</td><td>Other</td></tr> <tr><td>5000</td><td>PCM</td></tr> <tr><td>5100</td><td>CP hard approach</td></tr> <tr><td>5999</td><td>Post in remarks</td></tr> <tr><td>5999</td><td>Other</td></tr> </table>	1000	Building	6000	City	6100	1st digit NR	6110	1st digit NR Bypass	6200	2nd digit NR	6210	2nd digit NR Bypass	6300	3rd digit NR	6310	3rd digit NR Bypass	6999	Other	8000	NO USE	8001	Flight block	8002	Station block	8003	ROW boundary	8004	CDI boundary	8500	Commune boundary	8510	Province boundary	8511	International boundary	8999	Other	1000	Residence	1000	Residence/Commercial	1000	Commercial	1000	Shed	1000	Temporary shop	1000	Building under construction	1000	Factory	1000	Petro station	1000	Public office	1010	School public	1010	School private	1010	Pagoda	1010	Health center	1010	Mobile cart	1999	Other	2000	Approach to building	2000	Access Road	2000	Land filling	2000	Open Area	2000	Parking	2999	Other	3100	Signboard public	3110	Signboard private	3200	Street Light	3300	Pylon L	3310	Pylon R	3400	Cemetery	3500	Private drainage	3600	Well	3700	KM post	3800	ROW pole	3910	CP pole	3900	Control point (GCP)	3910	Benchmark (BM)	3999	Other	4000	Post in remarks	4599	Other	5000	PCM	5100	CP hard approach	5999	Post in remarks	5999	Other	<p>CSI point data code list</p> <table border="1"> <tr><td>1000</td><td>Residence</td></tr> <tr><td>1000</td><td>Residence/Commercial</td></tr> <tr><td>1000</td><td>Commercial</td></tr> <tr><td>1000</td><td>Shed</td></tr> <tr><td>1000</td><td>Temporary shop</td></tr> <tr><td>1000</td><td>Building under construction</td></tr> <tr><td>1000</td><td>Factory</td></tr> <tr><td>1000</td><td>Petro station</td></tr> <tr><td>1000</td><td>Public office</td></tr> <tr><td>1010</td><td>School public</td></tr> <tr><td>1010</td><td>School private</td></tr> <tr><td>1010</td><td>Pagoda</td></tr> <tr><td>1010</td><td>Health center</td></tr> <tr><td>1010</td><td>Mobile cart</td></tr> <tr><td>1999</td><td>Other</td></tr> <tr><td>2000</td><td>Approach to building</td></tr> <tr><td>2000</td><td>Access Road</td></tr> <tr><td>2000</td><td>Land filling</td></tr> <tr><td>2000</td><td>Open Area</td></tr> <tr><td>2000</td><td>Parking</td></tr> <tr><td>2999</td><td>Other</td></tr> <tr><td>3100</td><td>Signboard public</td></tr> <tr><td>3110</td><td>Signboard private</td></tr> <tr><td>3200</td><td>Street Light</td></tr> <tr><td>3300</td><td>Pylon L</td></tr> <tr><td>3310</td><td>Pylon R</td></tr> <tr><td>3400</td><td>Cemetery</td></tr> <tr><td>3500</td><td>Private drainage</td></tr> <tr><td>3600</td><td>Well</td></tr> <tr><td>3700</td><td>KM post</td></tr> <tr><td>3800</td><td>ROW pole</td></tr> <tr><td>3910</td><td>CP pole</td></tr> <tr><td>3900</td><td>Control point (GCP)</td></tr> <tr><td>3910</td><td>Benchmark (BM)</td></tr> <tr><td>3999</td><td>Other</td></tr> <tr><td>4000</td><td>Post in remarks</td></tr> <tr><td>4599</td><td>Other</td></tr> <tr><td>5000</td><td>PCM</td></tr> <tr><td>5100</td><td>CP hard approach</td></tr> <tr><td>5999</td><td>Post in remarks</td></tr> <tr><td>5999</td><td>Other</td></tr> </table>	1000	Residence	1000	Residence/Commercial	1000	Commercial	1000	Shed	1000	Temporary shop	1000	Building under construction	1000	Factory	1000	Petro station	1000	Public office	1010	School public	1010	School private	1010	Pagoda	1010	Health center	1010	Mobile cart	1999	Other	2000	Approach to building	2000	Access Road	2000	Land filling	2000	Open Area	2000	Parking	2999	Other	3100	Signboard public	3110	Signboard private	3200	Street Light	3300	Pylon L	3310	Pylon R	3400	Cemetery	3500	Private drainage	3600	Well	3700	KM post	3800	ROW pole	3910	CP pole	3900	Control point (GCP)	3910	Benchmark (BM)	3999	Other	4000	Post in remarks	4599	Other	5000	PCM	5100	CP hard approach	5999	Post in remarks	5999	Other
1000	Building																																																																																																																																																																																																								
6000	City																																																																																																																																																																																																								
6100	1st digit NR																																																																																																																																																																																																								
6110	1st digit NR Bypass																																																																																																																																																																																																								
6200	2nd digit NR																																																																																																																																																																																																								
6210	2nd digit NR Bypass																																																																																																																																																																																																								
6300	3rd digit NR																																																																																																																																																																																																								
6310	3rd digit NR Bypass																																																																																																																																																																																																								
6999	Other																																																																																																																																																																																																								
8000	NO USE																																																																																																																																																																																																								
8001	Flight block																																																																																																																																																																																																								
8002	Station block																																																																																																																																																																																																								
8003	ROW boundary																																																																																																																																																																																																								
8004	CDI boundary																																																																																																																																																																																																								
8500	Commune boundary																																																																																																																																																																																																								
8510	Province boundary																																																																																																																																																																																																								
8511	International boundary																																																																																																																																																																																																								
8999	Other																																																																																																																																																																																																								
1000	Residence																																																																																																																																																																																																								
1000	Residence/Commercial																																																																																																																																																																																																								
1000	Commercial																																																																																																																																																																																																								
1000	Shed																																																																																																																																																																																																								
1000	Temporary shop																																																																																																																																																																																																								
1000	Building under construction																																																																																																																																																																																																								
1000	Factory																																																																																																																																																																																																								
1000	Petro station																																																																																																																																																																																																								
1000	Public office																																																																																																																																																																																																								
1010	School public																																																																																																																																																																																																								
1010	School private																																																																																																																																																																																																								
1010	Pagoda																																																																																																																																																																																																								
1010	Health center																																																																																																																																																																																																								
1010	Mobile cart																																																																																																																																																																																																								
1999	Other																																																																																																																																																																																																								
2000	Approach to building																																																																																																																																																																																																								
2000	Access Road																																																																																																																																																																																																								
2000	Land filling																																																																																																																																																																																																								
2000	Open Area																																																																																																																																																																																																								
2000	Parking																																																																																																																																																																																																								
2999	Other																																																																																																																																																																																																								
3100	Signboard public																																																																																																																																																																																																								
3110	Signboard private																																																																																																																																																																																																								
3200	Street Light																																																																																																																																																																																																								
3300	Pylon L																																																																																																																																																																																																								
3310	Pylon R																																																																																																																																																																																																								
3400	Cemetery																																																																																																																																																																																																								
3500	Private drainage																																																																																																																																																																																																								
3600	Well																																																																																																																																																																																																								
3700	KM post																																																																																																																																																																																																								
3800	ROW pole																																																																																																																																																																																																								
3910	CP pole																																																																																																																																																																																																								
3900	Control point (GCP)																																																																																																																																																																																																								
3910	Benchmark (BM)																																																																																																																																																																																																								
3999	Other																																																																																																																																																																																																								
4000	Post in remarks																																																																																																																																																																																																								
4599	Other																																																																																																																																																																																																								
5000	PCM																																																																																																																																																																																																								
5100	CP hard approach																																																																																																																																																																																																								
5999	Post in remarks																																																																																																																																																																																																								
5999	Other																																																																																																																																																																																																								
1000	Residence																																																																																																																																																																																																								
1000	Residence/Commercial																																																																																																																																																																																																								
1000	Commercial																																																																																																																																																																																																								
1000	Shed																																																																																																																																																																																																								
1000	Temporary shop																																																																																																																																																																																																								
1000	Building under construction																																																																																																																																																																																																								
1000	Factory																																																																																																																																																																																																								
1000	Petro station																																																																																																																																																																																																								
1000	Public office																																																																																																																																																																																																								
1010	School public																																																																																																																																																																																																								
1010	School private																																																																																																																																																																																																								
1010	Pagoda																																																																																																																																																																																																								
1010	Health center																																																																																																																																																																																																								
1010	Mobile cart																																																																																																																																																																																																								
1999	Other																																																																																																																																																																																																								
2000	Approach to building																																																																																																																																																																																																								
2000	Access Road																																																																																																																																																																																																								
2000	Land filling																																																																																																																																																																																																								
2000	Open Area																																																																																																																																																																																																								
2000	Parking																																																																																																																																																																																																								
2999	Other																																																																																																																																																																																																								
3100	Signboard public																																																																																																																																																																																																								
3110	Signboard private																																																																																																																																																																																																								
3200	Street Light																																																																																																																																																																																																								
3300	Pylon L																																																																																																																																																																																																								
3310	Pylon R																																																																																																																																																																																																								
3400	Cemetery																																																																																																																																																																																																								
3500	Private drainage																																																																																																																																																																																																								
3600	Well																																																																																																																																																																																																								
3700	KM post																																																																																																																																																																																																								
3800	ROW pole																																																																																																																																																																																																								
3910	CP pole																																																																																																																																																																																																								
3900	Control point (GCP)																																																																																																																																																																																																								
3910	Benchmark (BM)																																																																																																																																																																																																								
3999	Other																																																																																																																																																																																																								
4000	Post in remarks																																																																																																																																																																																																								
4599	Other																																																																																																																																																																																																								
5000	PCM																																																																																																																																																																																																								
5100	CP hard approach																																																																																																																																																																																																								
5999	Post in remarks																																																																																																																																																																																																								
5999	Other																																																																																																																																																																																																								

THANK YOU FOR YOUR ATTENTION!!

DATA COLLECTION



DATA COLLECTION



IEP (ILLEGAL ENCROACHMENT PREVENTION) APPROACHES

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

OUTLINE

2

APPROACH METHODS

5

SOFT & HARD APPROACH

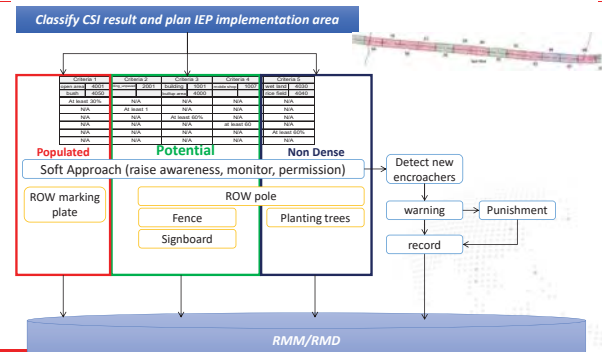
Hard Approach			Soft Approach			
New Road Design	Installing Facilities	Permission and Registration	Monitoring and Intervention	Raising awareness		
Constructing sub-road as ROW boundary	Digging channels as ROW boundary Pole Signboard Fence Growing Tree	ROW marking plate Access road permit	Appealing to the court ROW use permit ROW registration	Regular patrol activities Collaborating with local authorities	Local governmental official High school and university students	Local people

GENERAL

- ROW management map is developed using the data collection activities from CSI. Based on densities of ROW encroachments pointed on the ROW map, ROW areas shall be classified into populated, potential and non-dense areas. IEP shall be implemented properly according to classification of areas on ROW management map in order not to allow any illegal or inappropriate land uses in ROW.
- IEP approaches aim to prevent new encroachment in the ROW and to regulate temporary use of ROW with permission so as to manage and maintain the land secured for road development.

IEP METHOD CLASSIFICATION

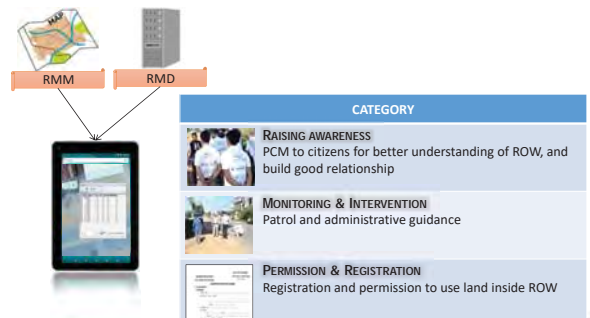
SOFT APPROACH
HARD APPROACH



ORGANIZATION

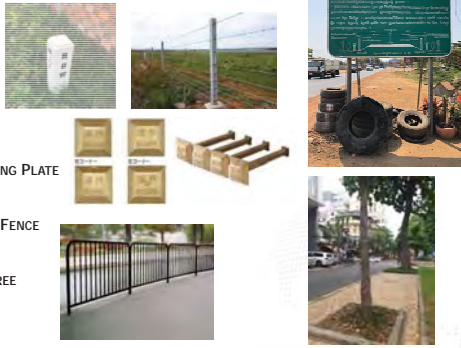
- According to Law on Road, MPWT is the road control authority in charge of construction, maintenance and management of all national roads in Cambodia. Also, Road Infrastructure Department (RID) of MPWT is a main actor in charge of ROW management of all national roads. Additionally, there are also other agencies/ministries involved in the ROW management such as Ministry of Interior, Ministry of Land Management, Urban Planning and Construction and Ministry of Education, Youth and Sport. MPWT is responsible for coordination, implementation, maintenance of the necessary records on the ROW and expenditure management and preparation of budgetary provisions.

IEP SOFT APPROACH



IEP HARD APPROACH

- 1. ROW POLE
- 2. IEP FENCE
- 3. SIGNBOARD
- 4. ROW MARKING PLATE
- 5. PEDESTRIAN FENCE
- 6. GROWING TREE

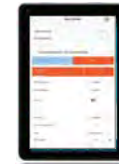
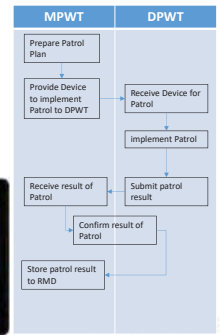


SOFT APPROACH-2

Monitoring and Intervention

MPWT and DPWT should collaborate to implement "Patrol" to collect the evidence from resident and to provide "Warning" for Illegal Encroachment.

- Patrol
- Administrative Guidance (To be Considered)



ROLES & PROCEDURES



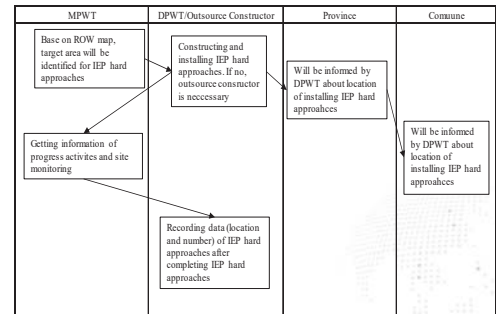
IEP HARD APPROACH ROLE

ITEM	MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification	✓				
Raise awareness (PCM)	1) Citizen	✓	✓		
	2) High school / University	✓			✓
	3) Local government office	✓	✓	✓	
Monitoring & intervention	1) Regular patrol	✓	✓	✓	
	2) Collaborating w/ local authorities		✓	✓	
	3) Appealing to court	✓	✓	✓	✓
Permission & Registration	1) ROW permit	✓	✓	✓	
	2) ROW registration	✓	✓	✓	
	3) Access road permit	✓	✓		✓
Supervision	1) Record of "raising awareness"	✓	✓		
	2) Record of "Monitoring"	✓	✓		
	3) Record of "Permission"	✓	✓		

IEP SOFT APPROACH ROLE

ITEM	MPWT	DPWT	Local Authority	MLMUPC	OTHER
Classification	✓				
Raise awareness (PCM)	1) Citizen	✓	✓		
	2) High school / University	✓			✓
	3) Local government office	✓	✓	✓	✓
Monitoring & intervention	1) Regular patrol	✓	✓	✓	
	2) Collaborating w/ local authorities		✓	✓	
	3) Appealing to court	✓	✓	✓	✓
Permission & Registration	1) ROW permit	✓	✓	✓	
	2) ROW registration	✓	✓	✓	✓
	3) Access road permit	✓	✓		✓
Supervision	1) Record of "raising awareness"	✓	✓		
	2) Record of "Monitoring"	✓	✓		
	3) Record of "Permission"	✓	✓		

HARD APPROACH

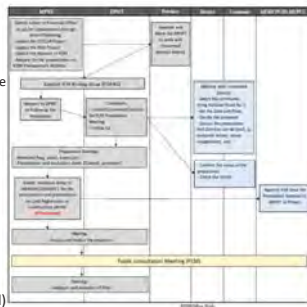


SOFT APPROACH-1

Raising awareness

Relevant organizations such as MPWT, DPWT and Local Authority should collaborate to provide "Consultation Meeting" to local people and relevant governments to ensure better understanding of ROW, and build good relationship

- Raising local people's awareness
- Raising relevant government officials' awareness
- Integrating ROW concept into school curriculum (To be Considered)



ផលវិជ្ជមាន និងផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

ផលវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

- កាត់បន្ថយការចំណាយរបស់ រដ្ឋាភិបាលទៅលើការដោះស្រាយផលប៉ះពាល់នៅពេលអភិវឌ្ឍផ្លូវ
- ងាយស្រួលក្នុងការអភិវឌ្ឍន៍បរិក្ខារផ្លូវផ្សេងៗដូចជា លូ ផ្លាកសញ្ញាពេចណ៍
- កាត់បន្ថយដំណោះដោះរដ្ឋ និងប្រជាពលរដ្ឋ
- កាត់បន្ថយគ្រោះថ្នាក់ចរាចរ (គ្មានអ្នករស់នៅក្បែរផ្លូវ, អ្នកបើកបរមើលឃើញស្ថានភាពផ្លូវច្បាស់)
- ធ្វើឱ្យផ្លូវប្រើប្រាស់បានយូរ មិនងាយខូច (ដោយសារមានគ្មានការបាក់ដីខ្ពស់ជាងផ្លូវមានប្រព័ន្ធរំលោភដីផ្លូវគ្រប់គ្រាន់)
- ផ្លូវមានសោភ័ណភាព

ផលវិជ្ជមាន និងផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

ផលអវិជ្ជមាន នៃការរំលោភដីចំណីផ្លូវ

- រដ្ឋចំណាយច្រើនទៅលើការដោះស្រាយផលប៉ះពាល់ គម្រោងពង្រីកផ្លូវ
- ធ្វើឱ្យផ្លូវជាប់ខូច (ដោយសារការរស់នៅជាប់ផ្លូវ, ចាក់ដីខ្ពស់ជាងផ្លូវ)
- រួមចំណែក បង្កគ្រោះថ្នាក់ចរាចរ ដោយសារការចូលមករស់នៅក្នុងដីចំណីផ្លូវជាឧបសគ្គធ្វើឱ្យអ្នកបើកបរមើលមិនច្បាស់
- ផ្លូវគ្មានសោភ័ណភាព

THANK YOU FOR YOUR ATTENTION!

អរគុណសម្រាប់ការយកចិត្តទុកដាក់ស្តាប់

ROW MANAGEMENT ACTIVITY AND PLAN

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

Contents

- Priority Activities
- Future Development Plan

Estimation Cost for ROW Management

Total length of all 1digit & 2digit National Road: 8,055km

<Priority Activities>

- CSI on the all 1digit & 2digit NR: USD 917,000
- PCM for 50 places: USD 100,000 for every year
- Patrol on all 1digit & 2digit NR: USD 73,000 for every year
- New ROW Pole on 1digit & 2digit NR (for 2,675km): USD 3,530,000
- Other Hard approaches is implemented in the national/international road project.

	1 st phase (1Y-3Y)	2 nd phase (4Y-6Y)	3 rd phase (7Y-9Y)
CSI	All 1digit & 2digit NR		Map update
PCM	50 places/year	50 places/year	50 places/year
Patrol	All 1digit & 2digit NR	All 1digit & 2digit NR	All 1digit & 2digit NR
ROW Pole	for 150km	for 600km	for 1,925km

First Phase Target for 3years

- CSI: Half of all 1digit & 2digit NR(3,472km): USD 462,000
- PCM for 50 places (2time in each province): USD 300,000
- Patrol on all 1digit & 2digit NR: USD 73,000
- New ROW Pole for 150km is installed: USD 198,000

Approaches	1 st year	2 nd year	3 rd year	3 years total	Remarks	
CSI	Progress	1,142km	1,142km	1,142km	3,427km	Half of 1 & 2 digit NR
	UAV	\$111,600	\$109,000	\$111,400	\$332,000	(Outsource) 38.9MM
	Office	\$35,300	\$4,400	\$4,400	\$44,100	90.3MM
	FS	\$30,200	\$25,900	\$30,200	\$86,300	321.7MM
	Total	\$177,000	\$139,000	\$146,000	\$462,000	
IEP	PCM	\$100,000	\$100,000	\$100,000	\$300,000	50 places / year
	Patrol	\$72,600	\$72,600	\$72,600	\$217,800	All 1 & 2 digit NR
	ROW Pole	\$66,000	\$66,000	\$66,000	\$198,000	For 150 km
Total	\$239,000	\$239,000	\$239,000	\$717,000		
Total	\$416,000	\$378,000	\$385,000	\$1,179,000		

PRIORITY ACTIVITIES

FUTURE DEVELOPMENT PLAN

Advantages of ROW Management

- Illegal occupation of state land makes implementation of resettlement procedure much more complicated and that management doesn't work effectively.
- And, resettlement cost will be higher in the future without adequate ROW management.
- Adequate ROW management can
 - Minimize the resettlement cost,
 - lead to smooth project implementation related to the road construction without delay of land issue.
- CSI and IEP activities contribute to prevent the illegal encroachment to the ROW on national road and to reduce the resettlement in the future.

Development Plan

- | | | |
|---------------|--------------|----------|
| • NR #1 | Total Length | 162.00Km |
| • NR #2 + 22 | Total Length | 120.00Km |
| • NR #4 | Total Length | 230.00Km |
| • NR #31+33+3 | Total Length | 150.00Km |
| • NR #8 | Total Length | 130.00Km |
| • NR #48 | Total Length | 150.00Km |

Thank you!!!



RMD System APP Training



3. Show Layer



Content:

1. Login
2. Show current location
3. Show Layer
4. Measure distance
5. Show point location
6. Add New CSI Point
7. Edit CSI Point
8. IEP

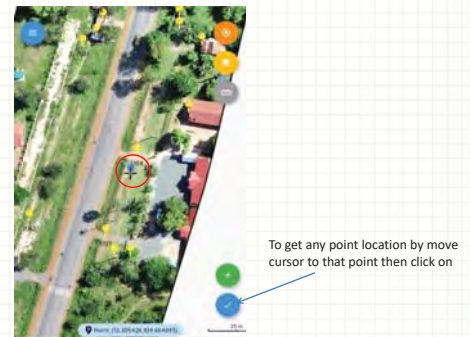
4. Measure distance



1. Login



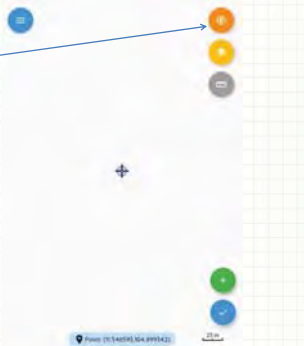
5. Show point location



To get any point location by move cursor to that point then click on

2. Show current location

To show current location click on



6. Add New CSI Point



Click on Category then select relevant CSI Category

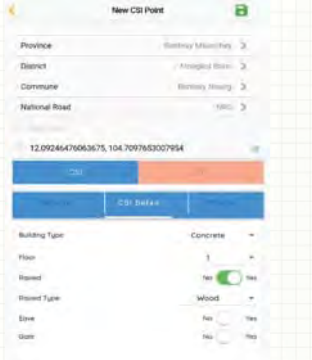


Click on Type the choose

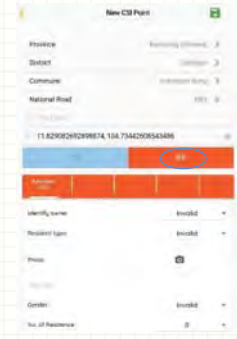
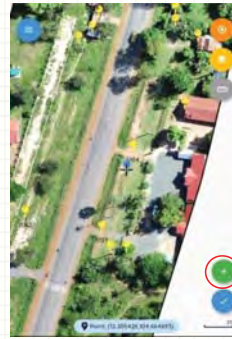
Then update necessary information



Click on CSI Detail Tab



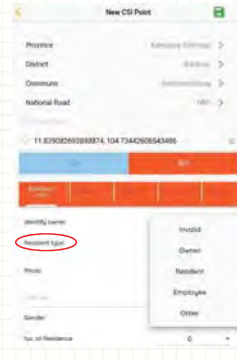
8. IEP



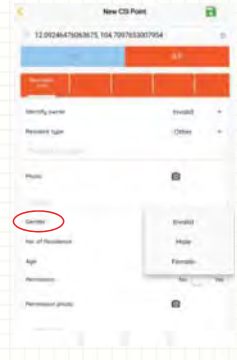
Click on Photos Tab, it can take 3 photos



Resident type

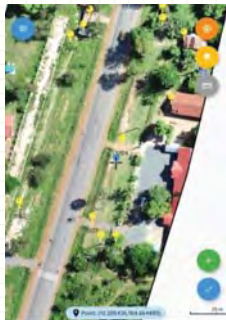


Gender

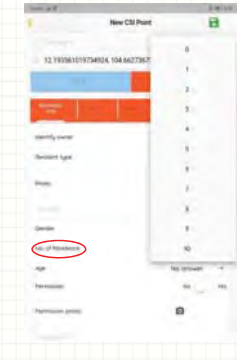


7. Edit CSI Point

To edit CSI Point, click on CSI point then choose Edit

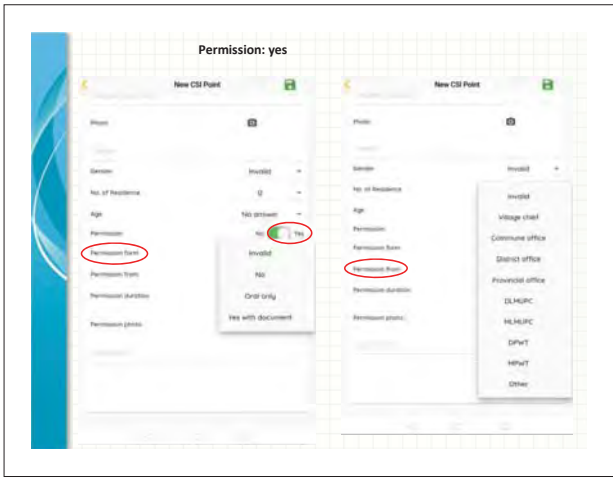


No. of Residence




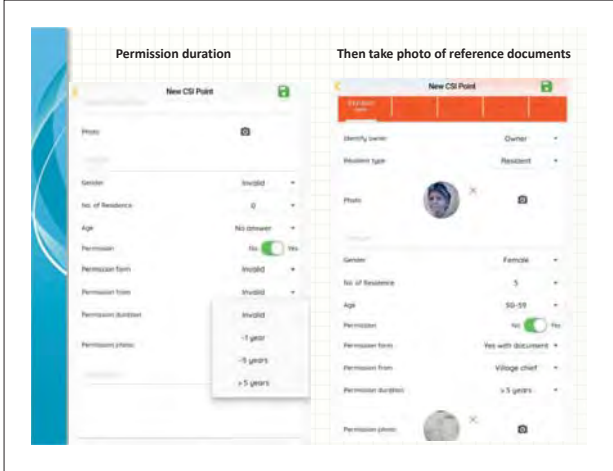
Age



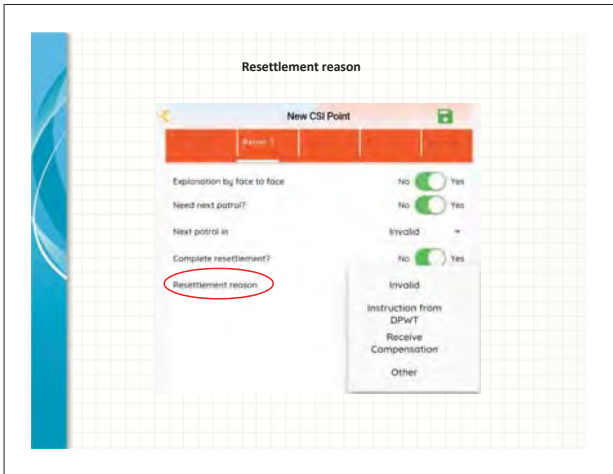
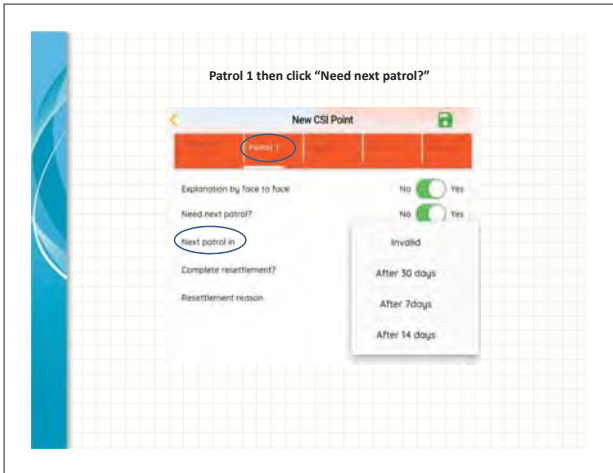


Field Practice at Phnom Penh Hotel

- **Update CSI Point(CSI) :**
Category, Type, Picture
- **Add New CSI Point :**
New Point, Category, Type, Picture
- **Update CSI Point (IEP) :**
Resident Info, Patrol

Thanks!!



NAME (ឈ្មោះ): _____
 ORG (អង្គការ): _____

WORKSHOP សិក្ខាសាលា COMPREHENSION TEST តេស្តសមត្ថភាព

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

គម្រោងពង្រឹងសមត្ថភាពលើការពិចារណាផ្នែកបរិស្ថាន និងសង្គមក្នុង
អង្គការប្រតិបត្តិលើវិស័យផ្លូវថ្នល់ក្នុងប្រទេសកម្ពុជា

Q1: PURPOSE OF ROW MANAGEMENT
 សំណួរ៖ គោលបំណងនៃការគ្រប់គ្រងដីចំណីផ្លូវ

▶ Select 1 **wrong** answer

សូមជ្រើសរើស ចម្លើយ ១ ដែលខុស

- To sustain public land
ដើម្បីធ្វើឱ្យទិរន្តរភាពផ្លូវសាធារណៈ
- To prevent illegal encroachment
ដើម្បីការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់
- To optimize construction
ដើម្បីធ្វើឱ្យប្រសើរឡើងនូវការសាងសង់
- To enhance road facility management
ដើម្បីធ្វើឱ្យប្រសើរឡើងនូវការគ្រប់គ្រងបរិក្ខារផ្លូវថ្នល់
- To punish illegal users
ដើម្បីពិន័យ និងដាក់ទោសអ្នកដែលប្រើប្រាស់ដីចំណីផ្លូវខុសច្បាប់

Q2: FULL TITLE OF RMS COMPONENT
 សំណួរ៖ ចំណងជើងពេញនៃសមាធាតុ RMS

▶ Write the full name of each abbreviation

សូមសរសេរពាក្យពេញនៃពាក្យកាត់ខាងក្រោម (ជាអង់គ្លេស ឬខ្មែរ)

- RMS:
- RMG:
- CSI:
- IEP:
- RMM:
- RMD:

Q3: PURPOSE OF CSI
 សំណួរ៖ គោលបំណងនៃការកំណត់ស្ថានភាពបច្ចុប្បន្ន

▶ Select 1 **wrong** answer

សូមជ្រើសរើស ចម្លើយ ១ ដែលខុស

- To identify current situation
ដើម្បីកំណត់ស្ថានភាពបច្ចុប្បន្ន
- To create Right Of Way Management Map
ដើម្បីបង្កើតផែនទីគ្រប់គ្រងដីចំណីផ្លូវ
- To create baseline for IEP classification
ដើម្បីកំណត់គោលការណ៍មូលដ្ឋាន (Baseline) សម្រាប់ការធ្វើចំណាត់ថ្នាក់
វិធីសាស្ត្រការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់
- To construct sustainable infrastructure
ដើម្បីសាងសង់ហេដ្ឋារចនាសម្ព័ន្ធដែលមានទិរន្តរភាព

Q4: ROLE FOR EACH ACTIVITY IN CSI
 សំណួរ៖ តួនាទីសម្រាប់សកម្មភាពនីមួយៗក្នុងការងារCSI

▶ Fill [✓] for correct authority for DPWT role សូមគូស [✓] សម្រាប់សមត្ថកិច្ចត្រឹមត្រូវសម្រាប់មន្ទីរ

ITEM ប្រភេទ	MPWT ក្រសួង	DPWT មន្ទីរ	LOCAL AUTHORITY អាជ្ញាធរមូលដ្ឋាន
KICKOFF MTG (កិច្ចប្រជុំដំបូង)	Arrangement ការរៀបចំ	✓ []	[]
	Implementation ការអនុវត្ត	✓ []	✓ []
UAV SURVEY (ការស្រាវជ្រាវ UAV)	Flight permission ការអនុញ្ញាតឱ្យបោះពុម្ពផ្សាយ	✓ []	✓ []
	Flight plan ផែនការបោះពុម្ពផ្សាយ	✓ []	[]
	UAV survey ការស្រាវជ្រាវដោយប្រើប្រាស់ UAV	✓ []	[]
OFFICE WORK (ការងារការិយាល័យ)	Supervision (for outsourcing) ការត្រួតពិនិត្យ (ឧទាហរណ៍ ការប្រើប្រាស់បរិក្ខារ)	✓ []	[]
	Image processing ដំណើរការរៀបចំរូបភាព Mapping (data production) ការធ្វើផែនទី (ផលិតទិន្នន័យទិន្នន័យ)	✓ []	[]
FIELD SURVEY (ការចាតុប្រតិបត្តិការ)	FS permission ការអនុញ្ញាតឱ្យចូលទៅស្រាវជ្រាវ	✓ []	✓ []
	Field survey ការចាតុប្រតិបត្តិការ	[]	[]
	Supervision ការត្រួតពិនិត្យ	✓ []	[]
GIS	data finalization ការបញ្ចប់ទិន្នន័យ	✓ []	[]

Q5: PURPOSE OF IEP
 សំណួរ៖ គោលបំណងនៃវិធីសាស្ត្រការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់

▶ Select 1 **wrong** answer

សូមជ្រើសរើស ចម្លើយ ១ ដែលខុស

- To select most suitable area for bridge construction
ដើម្បីជ្រើសរើសតំបន់ដែលសមស្របបំផុតសម្រាប់សាងសង់ស្ពាន
- To classify population inside Right Of Way
ដើម្បីចំណាត់ថ្នាក់ចំនួនប្រជាជនដែលរស់នៅក្នុងដីចំណីផ្លូវ
- To prevent new encroachment
ដើម្បីការពារការទម្រានដីចំណីផ្លូវថ្មី
- To manage and maintain public land
ដើម្បីគ្រប់គ្រង និងថែទាំដីសាធារណៈ

Q6: ROLE FOR EACH ACTIVITY IN IEP
 សំណួរ៖ តួនាទីសម្រាប់សកម្មភាពនីមួយៗក្នុងការងារការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់ (អង់គ្លេស)

▶ Fill [✓] for correct authority for DPWT role

ITEM	MPWT	DPWT	Local Authority	MUMUPC	OTHER
Classification	✓ []	[]			
Raise awareness	1) PCM	✓ []	✓ []		
	2) High school / University	✓ []	[]		✓ []
	3) Local government office	✓ []	[]	✓ []	
Monitoring & intervention	1) Regular patrol	✓ []	✓ []		
	2) Collaborating w/ local authorities	[]	[]	✓ []	
	3) Appealing to court	✓ []	✓ []		✓ []
Permission & Registration	1) ROW permit	✓ []	✓ []		
	2) ROW registration	✓ []	[]	✓ []	
	3) Access road permit	✓ []	[]		✓ []
Supervision	1) Record of "raising awareness"	✓ []	[]		
	2) Record of "Monitoring"	✓ []	[]		
	3) Record of "Permission"	✓ []	[]		

Q6: ROLE FOR EACH ACTIVITY IN IEP
 សំណួរ៖ តួនាទីសម្រាប់សកម្មភាពនីមួយៗក្នុងការងារការពារការទម្រានដីចំណីផ្លូវខុសច្បាប់ (ភាសាខ្មែរ)

▶ សូមគូស [✓] សម្រាប់សមត្ថកិច្ចត្រឹមត្រូវសម្រាប់មន្ទីរ

ប្រភេទ	ក្រសួង	មន្ទីរ	អាជ្ញាធរ	ក្រសួងដែនដី	ផ្សេងៗ
ចំណាត់ថ្នាក់	✓ []	[]			
ការលើកកម្ពស់ការយល់ដឹង	1) កិច្ចប្រជុំ/ប្រារព្ធនានា	✓ []	✓ []		✓ []
	2) វិទ្យាល័យ/បណ្ឌិត្យាល័យ	✓ []	[]		
	3) ការងារយល់ដឹងក្នុងសហគមន៍	✓ []	[]	✓ []	✓ []
ការត្រួតពិនិត្យ និងការអនុវត្ត	1) ការស្រាវជ្រាវ	✓ []	✓ []		
	2) សហការជាមួយអាជ្ញាធរមូលដ្ឋាន	[]	[]	✓ []	
	3) បណ្តុះបណ្តាល	✓ []	[]		✓ []
ការអនុញ្ញាត និងការចុះបញ្ជី	1) ការអនុញ្ញាតឱ្យប្រើប្រាស់ដីចំណីផ្លូវ	✓ []	✓ []		
	2) ការចុះបញ្ជីដីចំណីផ្លូវ	✓ []	[]	✓ []	
	3) ការអនុញ្ញាតសាងសង់ផ្លូវថ្នល់បណ្តោយ	✓ []	[]		✓ []
ការត្រួតពិនិត្យ	1) ការត្រួតពិនិត្យដីចំណីផ្លូវសាធារណៈ	✓ []	[]		
	2) ការត្រួតពិនិត្យដីចំណីផ្លូវ	✓ []	[]		
	3) ការត្រួតពិនិត្យការអនុវត្ត	✓ []	[]		

Q7: WHAT IS THE TABLET & APP FOR?
សំណួរលេខ ៧ តើ TABLET និង APP សម្រាប់ធ្វើការងារអ្វី?

1P

► Select 1 **wrong** answer

សូមជ្រើសរើស ចម្លើយ ១ ដែលខុស

- 1. For CSI UAV survey
សម្រាប់ការងារស្រាវជ្រាវបង្ហាញរូបភាពដីឡើងវិញកំណត់ស្ថានភាពបច្ចុប្បន្ន
- 2. For CSI field survey
សម្រាប់ការងារចុះស្រាវជ្រាវដីឡើងវិញកំណត់ស្ថានភាពបច្ចុប្បន្ន
- 3. For IEP patrol
សម្រាប់ការងារល្បាតដីឡើងវិញការពារការទម្រង់ដីចំណីផ្លូវខុសច្បាប់
- 4. For IEP activity record
សម្រាប់កត់ត្រាសកម្មភាពការពារការទម្រង់ដីចំណីផ្លូវខុសច្បាប់



END OF THE TEST!!

ចុងបញ្ចប់នៃបញ្ជីសំណួរ

សូមអរគុណ!!!



Workshop for Practice of ROW Management System
Date: 30th August 2019 at PHNOM PENH Hotel

Correction of Comprehensive Test (with TF Members)

No.	Participants	Organization	Q1 (1p): Purpose of ROW Management	Q2 (6p): Full name of each abbreviation	Q3 (1p): Purpose of CSI	Q4 (6p): Correct authority for DPWT	Q5 (1p): Purpose of IEP	Q6 (4p): Correct authority for DPWT Role	Q7 (1p): What is the Tablet and App for?	Total (score) 20/20
1	Mr. Yem Veasna	MPWT	1	6	1	6	1	4	0	19
2	Ms. Touch Kimsan	MPWT-PID	1	6	1	4	1	3.5	1	17.5
3	Mr. Lin Thea Tong	DPWT-Kep	1	6	1	2	1	1	1	13
4	Mr. To Dara	DPWT-Kep	1	2	1	3	1	1.5	1	10.5
5	Mr. Din Virak	DPWT-Kep	0	4	1	3	1	2	1	12
6	Mr. Yi Hokleang	DPWT-Kampot	1	6	1	6	1	4	1	20
7	Mr. Lim Dara	DPWT-Kampot	1	6	0	5	1	3.5	0	16.5
8	Mr. Chhim Chan Chhaya	DPWT-Kampot	0	6	1	6	1	4	1	19
9	Mr. Kong Rasmey	DPWT-Kampot	1	6	1	6	1	3.5	1	19.5
10	Mr. Chea Hong	DPWT-Takeo	1	6	1	4	1	2	1	16
11	Mr. Oum Chanthorng	DPWT-Takeo	1	6	0	6	1	3.5	1	18.5
12	Mr. Tay Chhaya	DPWT-Koh Kong	1	6	0	1	1	3.5	1	13.5
13	Mr. Kheng Seiha	DPWT-Koh Kong	0	6	1	4	1	2	1	15
14	Mr. Va Vantith	DPWT-Koh Kong	0	6	0	2	0	2.5	1	11.5
15	Mr. Ry Sotheary	DPWT-Preah Vihear	0	6	1	2	1	3.5	0	13.5
16	Mr. Chan Virak	DPWT-Kampong Speu	1	3	0	1	0	1.5	0	6.5
17	Mr. Roeurng Naroth	DPWT-Kampong Speu	1	5	0	4	1	3	0	14
18	Mr. Reth Ratanak	DPWT-Kampong Speu	1	5	1	4	1	3.5	0	15.5
19	Mr. Peang Sameun	MPWT-ICD	1	5	0	6	1	3.5	0	16.5
20	Mr. An Menghour	MPWT-ICD	1	6	1	6	1	4	0	19
21	Mr. Khai Saray	MPWT-RID	1	6	1	6	1	4	1	20
22	Mr. Chea Samnang	MPWT-RID	1	6	1	6	1	4	1	20
23	Mr. Khoun Kompheak	MPWT-RID	1	6	1	6	1	4	1	20
24	Mr. Hay Chandara	MPWT-RID	1	6	1	6	1	4	1	20

25	Mr. Sao Premarak	MPWT-RID	1	6	1	6	1	4	1	20
26	Mr. Kong Youreth	MPWT-PID	0	6	1	6	0	4	1	18
27	Ms. Eam Sokchea	MPWT-PID	1	6	1	5	1	4	1	19

(Q1) Ratio of correct answer (%) (Q2) Ratio of correct answer (%) (Q3) Ratio of correct answer (%) (Q4) Ratio of correct answer (%) (Q5) Ratio of correct answer (%) (Q6) Ratio of correct answer (%) (Q7) Ratio of correct answer (%)

77.78 77.78 74.07 74.07 88.89 88.89 40.74 70.37

Conclusion:

Almost of the participants got the good scores for the test. Based on the Ratio of Correct Answer, Q4 and Q6 are very difficult for the participants.

The reason of low ratio of correction answer for Q4 and Q6 is the participants did not check the documents during the test, based on the observation. They selected answers based on what they had remembered from the presentation.

Workshop for Practice of ROW Management System
Date: 30th August 2019 at PHNOM PENH Hotel

Correction of Comprehensive Test (without TF Members)

No.	Participants	Organization	Q1 (1p): Purpose of ROW Management	Q2 (6p): Full name of each abbreviation	Q3 (1p): Purpose of CSI	Q4 (6p): Correct authority for DPWT	Q5 (1p): Purpose of IEP	Q6 (4p): Correct authority for DPWT Role	Q7 (1p): What is the Tablet and App for?	Total (score) 20/20
1	Mr. Yem Veasna	MPWT	1	6	1	6	1	4	0	19
2	Ms. Touch Kimsan	MPWT-PID	1	6	1	4	1	3.5	1	17.5
3	Mr. Lin Thea Tong	DPWT-Kep	1	6	1	2	1	1	1	13
4	Mr. To Dara	DPWT-Kep	1	2	1	3	1	1.5	1	10.5
5	Mr. Din Virak	DPWT-Kep	0	4	1	3	1	2	1	12
6	Mr. Yi Hokleang	DPWT-Kampot	1	6	1	6	1	4	1	20
7	Mr. Lim Dara	DPWT-Kampot	1	6	0	5	1	3.5	0	16.5
8	Mr. Chhim Chan Chhaya	DPWT-Kampot	0	6	1	6	1	4	1	19
9	Mr. Kong Rasmey	DPWT-Kampot	1	6	1	6	1	3.5	1	19.5
10	Mr. Chea Hong	DPWT-Takeo	1	6	1	4	1	2	1	16
11	Mr. Oum Chanthong	DPWT-Takeo	1	6	0	6	1	3.5	1	18.5

12	Mr. Tay Chhaya	DPWT-Koh Kong	1	6	0	1	1	1	3.5	1	13.5
13	Mr. Kheng Seiha	DPWT-Koh Kong	0	6	1	4	1	2		1	15
14	Mr. Va Vantith	DPWT-Koh Kong	0	6	0	2	0	2.5		1	11.5
15	Mr. Ry Sotheary	DPWT-Preah Vihear	0	6	1	2	1	3.5		0	13.5
16	Mr. Chan Virak	DPWT-Kampong Speu	1	3	0	1	0	1.5		0	6.5
17	Mr. Roeurng Naroth	DPWT-Kampong Speu	1	5	0	4	1	3		0	14
18	Mr. Reth Ratanak	DPWT-Kampong Speu	1	5	1	4	1	3.5		0	15.5

(Q1) Ratio of correct answer (%) (Q2) Ratio of correct answer (%) (Q3) Ratio of correct answer (%) (Q4) Ratio of correct answer (%) (Q5) Ratio of correct answer (%) (Q6) Ratio of correct answer (%) (Q7) Ratio of correct answer (%)

48.15 48.15 44.44 44.44 59.26 59.26 44.44

18.52 11.11

44.44

Conclusion:

Without TF members' score added, the ratio of correct answer of each question is very low ranging from 11.11% to 48.15%. There can be 2 reasons (1): it was the first time for all DPWTs' officials from these provinces (Preah Vihear, Koh Kong, Kampong Speu, Kampot, Kep and Takeo) to learn about the CESCO project as well as the CSI and IEP; (2) they did not check the document during the test. Q4 and Q6 seem very difficult to all participants because it is memory-based (without checking the

Sample of Form

Workshop Evaluation (Workshop for Practice of ROW Management System)

Strongly Agree Strongly Disagree
1 2 3 4 5

1. Presentation on Outline for ROW Management Methods

- 1.1 Topics were interesting.
- 1.2 Materials distributed were useful.
- 1.3 The presentations were clear and easy to understand.
- 1.4 If you have any specific comments, please kindly share with us as below:
Comments

2. Presentation on Field Survey for Current Status Identification (CSI)

- 2.1 Topics were interesting.
- 2.2 Materials distributed were useful.
- 2.3 The presentations were clear and easy to understand.
- 2.4 If you have any specific comments, please kindly share with us as below:
Comments

3. Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches

- 3.1 Topics were interesting.
- 3.2 Materials distributed were useful.
- 3.3 The presentations were clear and easy to understand.
- 3.4 If you have any specific comments, please kindly share with us as below:
Comments

4. Presentation on ROW Management Activity and Plan

- 4.1 Topics were interesting.
- 4.2 Materials distributed were useful.
- 4.3 The presentations were clear and easy to understand.
- 4.4 If you have any specific comments, please kindly share with us as below:
Comments

5. Presentation on Implementation of Field Survey (CSI) and Patrol (IEP)

- 5.1 Topics were interesting.
- 5.2 Materials distributed were useful.

5.3 The presentations were clear and easy to understand.
5.4 If you have any specific comments, please kindly share with us as below:
Comments

6. Workshop Organization
6.1 The workshop met my expectations.
6.2 Workshop was nicely organized.
6.3 Interpretation for workshop was clear to understand.
6.4 The time for each presentation was
6.5 The time for discussion was

7. Overall, how do you rate the Workshop?

8. What aspects of workshop can be improved for the next one?
Comments

9. If you any specific comments, please kindly share with us as below:
Comments

Summary of Workshop Evaluation (Workshop for Practice of ROW Management System)

	Strongly Agree					Strongly Disagree					Total
	1	2	3	4	5	1	2	3	4	5	
1. Presentation on Outline for ROW Management Methods											
1.1 Topics were interesting.	8	8	0	2	0	0	0	0	2	0	18
1.2 Materials distributed were useful.	5	8	4	1	0	0	0	4	1	0	18
1.3 The presentations were clear and easy to understand.	4	8	6	0	0	0	0	6	0	0	18
1.4 If you have any specific comments, please kindly share with us as below:											4
Percentage											
1.1 Topics were interesting.	44%	44%	0%	11%	0%	0%	0%	0%	11%	0%	0%
1.2 Materials distributed were useful.	28%	44%	22%	6%	0%	0%	0%	22%	6%	0%	0%
1.3 The presentations were clear and easy to understand.	22%	44%	33%	0%	0%	0%	0%	33%	0%	0%	0%
1.4 If you have any specific comments, please kindly share with us as below:	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

	Strongly Agree					Strongly Disagree					Total
	1	2	3	4	5	1	2	3	4	5	
2. Presentation on Field Survey for Current Status Identification (CSI)											
2.1 Topics were interesting.	5	11	1	1	0	0	0	1	1	0	18
2.2 Materials distributed were useful.	3	11	3	1	0	0	0	3	1	0	18
2.3 The presentations were clear and easy to understand.	3	7	7	1	0	0	0	7	1	0	18
2.4 If you have any specific comments, please kindly share with us as below:											0
Percentage											
2.1 Topics were interesting.	28%	61%	6%	6%	0%	0%	0%	6%	6%	0%	0%
2.2 Materials distributed were useful.	17%	61%	17%	6%	0%	0%	0%	17%	6%	0%	0%
2.3 The presentations were clear and easy to understand.	17%	39%	39%	6%	0%	0%	0%	39%	6%	0%	0%
2.4 If you have any specific comments, please kindly share with us as below:	error	error	error	error	error	error	error	error	error	error	error

	Strongly Agree					Strongly Disagree				
	1	2	3	4	5	1	2	3	4	5
3. Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches										
3.1 Topics were interesting.	6	10	2	0	0	18				
3.2 Materials distributed were useful.	4	8	4	2	0	18				
3.3 The presentations were clear and easy to understand.	3	8	7	0	0	18				
3.4 If you have any specific comments, please kindly share with us as below:						1				
Percentage										
3.1 Topics were interesting.	33%	56%	11%	0%	0%	0%				
3.2 Materials distributed were useful.	22%	44%	22%	11%	0%	0%				
3.3 The presentations were clear and easy to understand.	17%	44%	39%	0%	0%	0%				
3.4 If you have any specific comments, please kindly share with us as below:	0%	0%	0%	0%	0%	0%				

	Strongly Agree					Strongly Disagree				
	1	2	3	4	5	1	2	3	4	5
4. Presentation on ROW Management Activity and Plan										
4.1 Topics were interesting.	8	7	1	2	0	18				
4.2 Materials distributed were useful.	4	8	6	0	0	18				
4.3 The presentations were clear and easy to understand.	3	10	5	0	0	18				
4.4 If you have any specific comments, please kindly share with us as below:						1				
Percentage										
4.1 Topics were interesting.	44%	39%	6%	11%	0%	0%				
4.2 Materials distributed were useful.	22%	44%	33%	0%	0%	0%				
4.3 The presentations were clear and easy to understand.	17%	56%	28%	0%	0%	0%				
4.4 If you have any specific comments, please kindly share with us as below:	0%	0%	0%	0%	0%	0%				

	Strongly Agree					Strongly Disagree				
	1	2	3	4	5	1	2	3	4	5
5. Presentation on Implementation of Field Survey (CSI) and Patrol (IEP)										
5.1 Topics were interesting.	5	7	6	0	0	18				
5.2 Materials distributed were useful.	2	13	3	0	0	18				
5.3 The presentations were clear and easy to understand.	2	8	5	1	2	18				
5.4 If you have any specific comments, please kindly share with us as below:						0				
Percentage	28%	39%	33%	0%	0%					
5.1 Topics were interesting.	11%	72%	17%	0%	0%					
5.2 Materials distributed were useful.	11%	44%	28%	6%	11%					
5.3 The presentations were clear and easy to understand.	error	error	error	error	error					
5.4 If you have any specific comments, please kindly share with us as below:										

	Strongly Agree					Strongly Disagree				
	1	2	3	4	5	1	2	3	4	5
6. Workshop Organization										
6.1 The workshop met my expectations.	7	8	2	1	0	18				
6.2 Workshop was nicely organized.	8	5	5	0	0	18				
6.3 Interpretation for seminar was clear to understand.	5	6	6	0	0	17				
6.4 The time for reach presentation was	1	16	1			18				
6.5 The time for discussion was	3	15	0			18				
Percentage	39%	44%	11%	6%	0%					
6.1 The workshop met my expectations.	44%	28%	28%	0%	0%					
6.2 Workshop was nicely organized.	29%	35%	35%	0%	0%					
6.3 Interpretation for seminar was clear to understand.	6%	89%	6%							
6.4 The time for reach presentation was	17%	83%	0%							
6.5 The time for discussion was										

	Excellent					Very Poor					Total
	1	2	3	4	5	1	2	3	4	5	
7. Overall, how do you rate the workshop?	3	14	1								18
Percentage	17%	78%	6%	0%	0%	0%	0%	0%	0%	0%	

8. What aspects of workshop can be improved for the next one? 7

9. If you have any specific comments: 9

Summary of Evaluation: Workshop for Practice of ROW Management System

Date: 30th August 2019

Time: 8:00-16:00

Venue: PHNOM PENH Hotel Meeting Room

Participants:

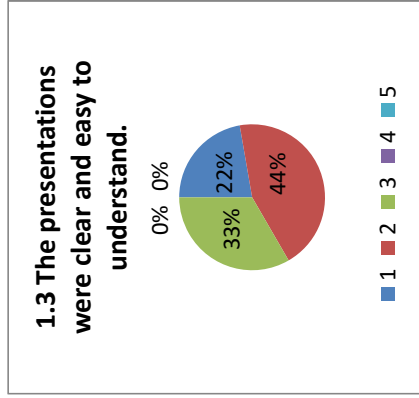
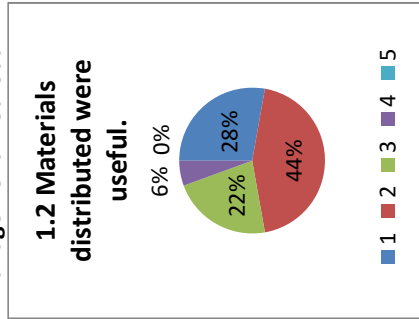
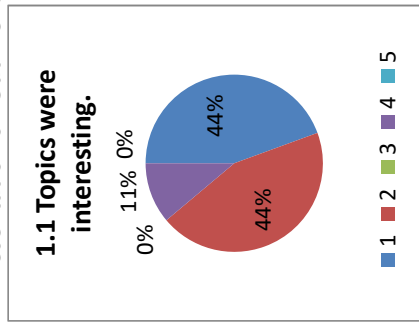
MPWWT: 12

DPWWT: 16

Others: 0

Project Team: 8

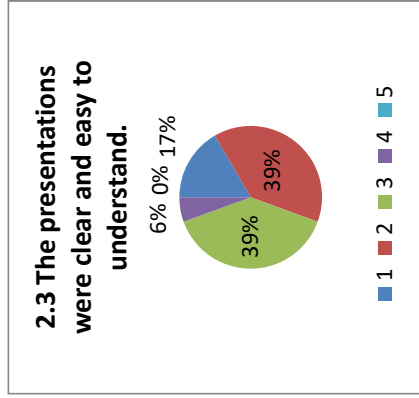
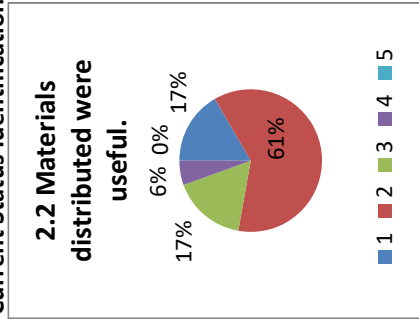
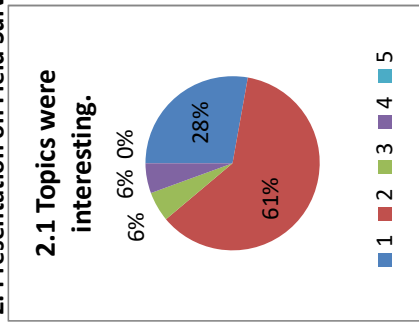
1. Presentation on Outline for ROW Management Methods



Comments

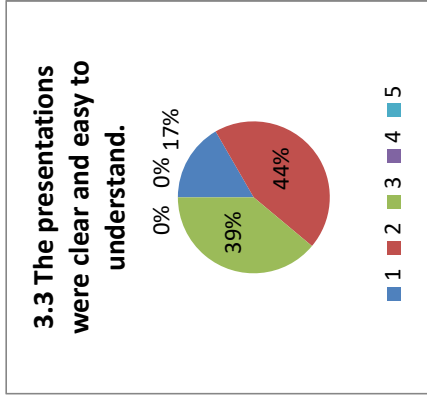
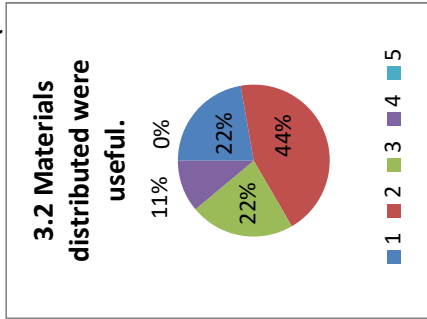
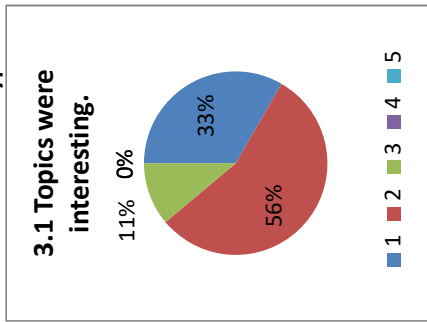
- Please provide the material in Khmer so it is easy to read and understand;
- Please provide clear guidelines/document specifying the law and sub-decrees;
- If possible, should build the canals along the roads for better road condition and ROW encroachment prevention; and
- Reduce the resettlement cost during the development.

2. Presentation on Field Survey for Current Status Identification (CSI)



Comments

3. Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches



Comments

- Without clear definition and boundary between urban and non-urban areas and lack of legal document, the implementation on ROW management is very difficult.

Strongly Agree

Strongly Disagree

Strongly Agree

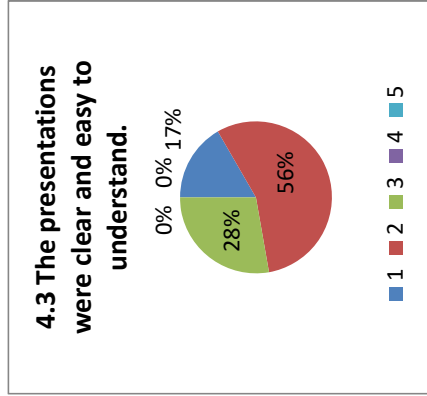
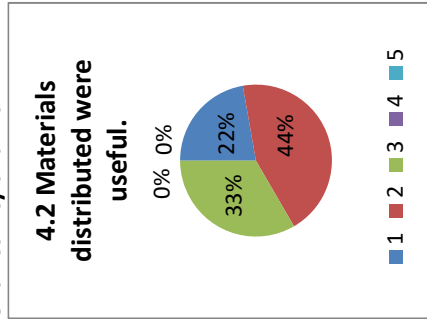
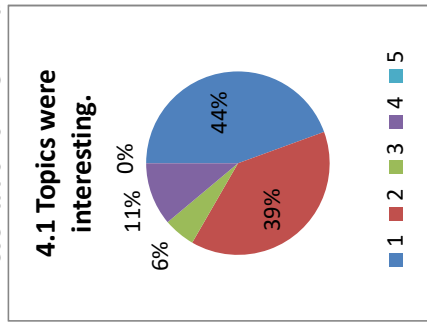
Strongly Disagree

Strongly Agree

Strongly Disagree

Comments

4. Presentation on ROW Management Activity and Plan



Comments

- All relevant units/institutes at provinces and cities have not yet well cooperated on the ROW management.

Strongly Agree

Strongly Disagree

Strongly Agree

Strongly Disagree

Strongly Agree

Strongly Disagree

Comments

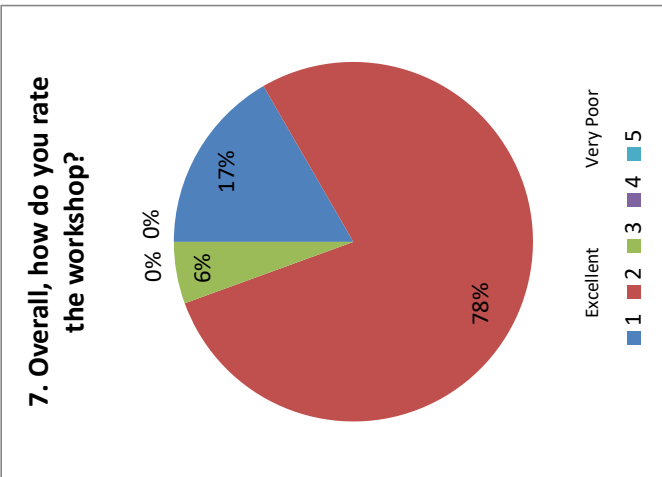
5. Presentation on Implementation of Field Survey (CSI) and Patrol (IEP)

Statement	Comments
<p>5.1 Topics were interesting.</p> <p>Strongly Agree Strongly Disagree</p>	
<p>5.2 Materials distributed were useful.</p> <p>Strongly Agree Strongly Disagree</p>	
<p>5.3 The presentations were clear and easy to understand.</p> <p>Strongly Agree Strongly Disagree</p>	
<p>5.4 The time for presentation was</p> <p>Too Short Too Long</p>	
<p>5.5 The time for discussion was</p> <p>Too Short Too Long</p>	

6. Workshop Organization

<p>6.1 The Workshop met my expectations.</p> <p>Strongly Agree Strongly Disagree</p>	
<p>6.2 Workshop was nicely organized.</p> <p>Strongly Disagree Strongly Agree</p>	
<p>6.3 Interpretation for seminar was clear to understand.</p> <p>Strongly Disagree Strongly Agree</p>	
<p>6.4 The time for reach presentation was</p> <p>Too Short Too Long</p>	
<p>6.5 The time for discussion was</p> <p>Too Short Too Long</p>	

7. Overall, how do you rate the workshop?



8. What aspects of workshop can be improved for the next one 9. if you have any specific comments:

Comments
<ul style="list-style-type: none"> - Give training on Drone Flight and Photo Processing; - The improvement for the next workshop is the preparation of the presentation material that should be in Khmer and English; - Presentation material should be translated into Khmer; - For the next workshop, please improve or update the App RMD System because it has not yet functioned properly during the presentation and demo; - Please explain one software or any App in detail that make sure trainees can use them and apply to the job; - Interested in the workshop and gain knowledge; and - Would like to have more participants.

Comments
<ul style="list-style-type: none"> - Provide the real practice to DPWT; - Workshop (1) improve knowledge on ROW; (2) Enhance Capacity; and (3) Easy to understand the presentation of the workshop; - Want to get such kind of this opportunity very often to learn and share experiences; Share all information on the update of ROW Management System; establish the study group, strengthen the law, disseminate or provide the training on Drone flight for ROW management; provide more opportunities to learn from JICA because it is very useful for ROW management, road infrastructure protection, and saving on Gov't expense; - This workshop is good because be able to understand the ROW management System. Would like to have such kind of workshop again next time; - Want to have the trainings everyday then DPWT officials will be able to practice and get new knowledge; - Please create the group in the Telegram, it is easy for DPWT officials to ask any question; - After learning from the presentation, this workshop is good and very useful. Hope that the

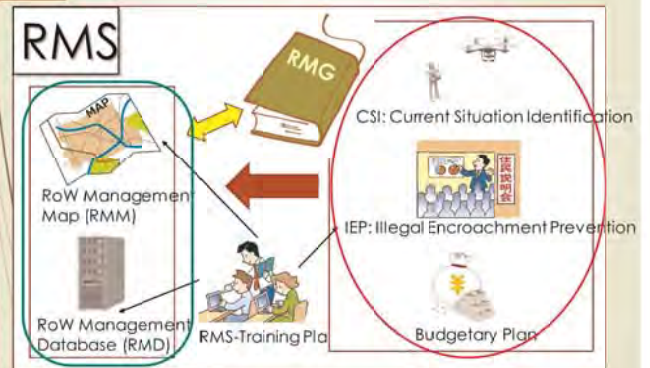


Training of Trainer

Day II: CSI Outline

21st March, 2019
Phnom Penh

Right of Way Management System (RMS)



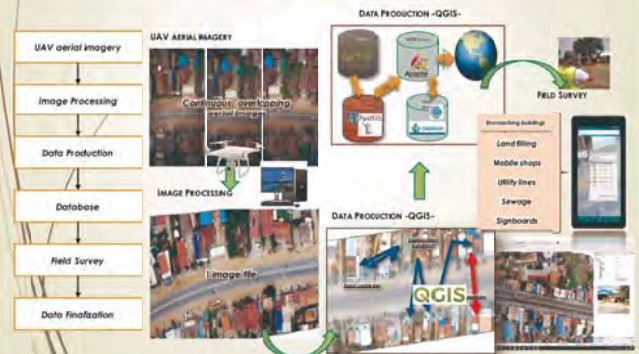
2

Contents

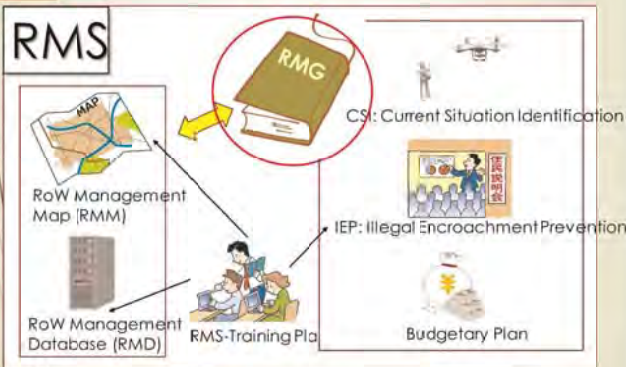
- Right of Way Management System (RMS)
- Draft of ROW Management Guidelines (RMG)
- Pilot Project (CSI & IEP)

6

Pilot Project for RMM and RMD Development (CSI)



Right of Way Management System (RMS)



7

RMM and RMD for Classification for IEP Approaches

- Set up three types of classification by condition of encroachment (1) Populated, (2) Potential and (3) Non Dense
- Classify areas for IEP plan based on the number of encroachments
- Classification by **Block unit** and/or **Commune unit**
- Consider Selection of IEP Approaches by classification

Classification	Abstraction
Populated (Dense)	no more buildings are built in the ROW area
Potential (Semi-Dense)	some buildings exist in the ROW area, but the majority of the area is empty
Non Dense (Open, Few House)	an empty building exists in the ROW area, but the majority of the area is empty

Select Priority Area 2km for IEP Approaches

Draft of ROW Management Guidelines (RMG)

- CHAPTER 1: BASIC POLICY**
 - 1.1 Background
 - 1.2 Objectives
 - 1.3 Scope
 - 1.4 Definition of Terminology
 - 1.5 Legal Basis
- CHAPTER 2: CURRENT STATUS IDENTIFICATION (CSI)**
 - 2.1 General
 - 2.2 ROW Management Map (RMM)
 - 2.3 ROW Management Database (RMD)
- CHAPTER 3: ILLEGAL ENCROACHMENT PREVENTION (IEP)**
 - 3.1 General
 - 3.2 Monitoring and Intervention on illegal ROW encroachment
 - 3.3 Raising Public Awareness
 - 3.4 Boundary Management (Specification)
 - 3.5 Proper Procedures of ROW Usage
- CHAPTER 4: OPTIONS FOR FUTURE ROAD DEVELOPMENT**
 - 4.1 Digging Channel as ROW Boundary
 - 4.2 Constructing road at the edge of ROW Boundary
 - 4.3 Constructing sub-road/service road at the edge of ROW Boundary
- CHAPTER 5: BUDGETARY PLAN**
 - 5.1 Budget for Implementing CSI
 - 5.2 Budget for Implementing IEP
 - 5.3 Budget for Options for Future road Development
 - 5.4 Source: MEF, Development Partners and other


8

Outline of IEP Approaches

The methods which are appropriate classification of the areas and selection of IEP approaches are to be considered through Pilot Project.

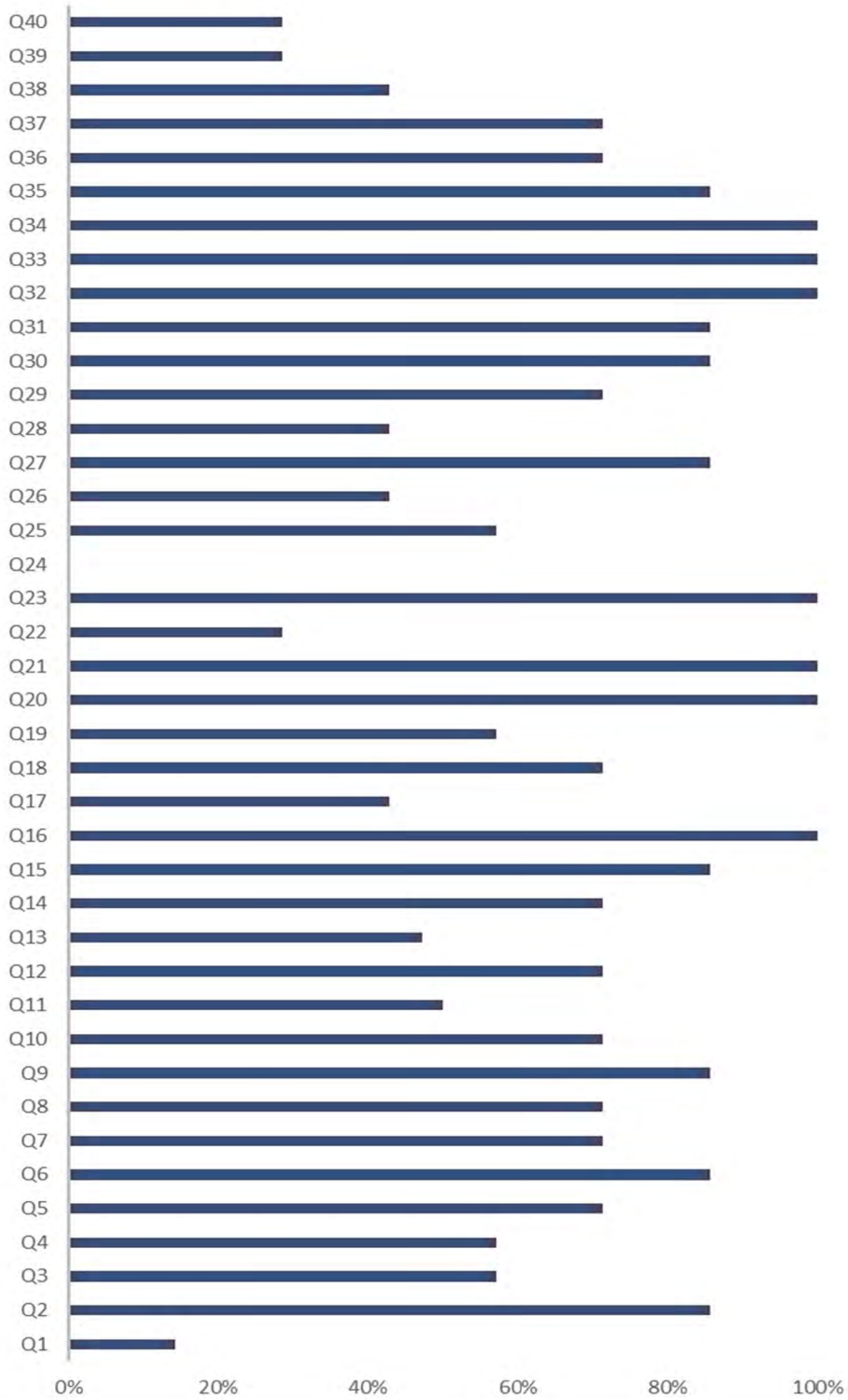
Activities for Future Project	Activities for Existing Project				
	Hard Approach		Soft Approach		
	New Road Design	Installing Facilities	Permission and Registration	Monitoring and Intervention	Raising awareness
	Digging channels as ROW boundary	Fence signboard	Access road permit ROW registration ROW use permit	Monitoring and Intervention Appealing to the court Cooperating with local authorities Regular patrol activities	High school and university students Local governmental official Regular patrol activities Local people
	Road from the edge of ROW boundary and keep empty space in the middle Constructing sub-road as ROW boundary	Planting trees Growing trees	ROW marking plate Highlighting color on the road		

To implement the approaches for Populated and Potential Area



Thank you
for your attention

**TOT WORKSHOP
RATE OF CORRECT ANSERS
GROUP AVERAGE 67%**



NAME:

TOT (TRAINING OF TRAINER) UNDERSTANDING TEST

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

Q: PURPOSE OF ROW MANAGEMENT

1P

Select 1 **wrong** answer

1. To sustain public land
2. To prevent illegal encroachment
3. To optimize construction
4. To enhance road facility management
5. To punish illegal users

Q: FULL TITLE OF RMS COMPONENT

6P

Write the full name of each abbreviation

1. RMS: **ROW Management System**
2. RMG: **ROW Management Guideline**
3. CSI: **Current Status Identification**
4. IEP: **Illegal Encroachment Pretension**
5. RMM: **ROW Management Map**
6. RMD: **ROW Management Database**

Q: ITEMS TO BE IDENTIFIED IN CSI

2P

Select 2 **mistakes** from below

1. Aerial image
2. Road center line
3. Road side line
4. Manhole
5. Building
6. Ground photo

Q: WORK FLOW TO IMPLEMENT CSI

1P

- Select the **correct** work flow (A) or (B)

Flow (A)

1. Aerial Photography
2. Image Processing
3. GIS mapping
4. Field Survey
5. Data Finalization

Flow (B)

1. Aerial Photography
2. GIS mapping
3. Image Processing
4. Field Survey
5. Data Finalization

Q: ROLE FOR EACH ACTIVITY IN CSI

4P

- Fill [✓] for correct authority

	ITEM	DPWT	Local Authority
UAV survey	1) Arrange UAV flight permission	[]	[✓]
	2) Prepare UAV flight plan	[✓]	[]
	3) Implement UAV survey	[✓]	[]
	4) Supervision	[]	[]
GIS	1) Data processing (image, GIS data)	[✓]	[]
	1) Arrange FS permission	[]	[✓]
Field Survey	2) Implement FS	[✓]	[]
	3) Supervision	[]	[]
	1) Data finalization	[✓]	[]

Q: PROCESS TO MAKE FLIGHT BLOCK

1P

- Select **correct** work flow

Flow (A)

1. Draw center line
2. Create 500m pitch point
3. Split line
4. Create buffer polygon
5. Convert to kml and to tablet

Flow (B)

1. Draw center line
2. Create 300m pitch point
3. Duplicate line
4. Create buffer polygon
5. Convert to kml and to tablet

Q: UAV FLIGHT SETTINGS

5P

- Select **correct** settings

1. Speed: (A) slow (B) fast
2. Angle: (A) horizontal (B) vertical
3. Overlap: (A) 80% (B) 90%
4. Face: (A) forward (B) center
5. Altitude: (A) 100ft (B) 100m

Q: GCP SURVEY

4P

Select correct answer

1. We use (A) Handy GPS, (B) Total Station
2. Accuracy of GCP is (A) 1-3m, (B) 3-5m
3. GCP should be (A) no obstacle in sky, (B) tree is okay
4. The ideal sign size is (A) 15 times, (B) 30 times, the Ground

Sample Distance pixel size

Q: IMAGE PROCESSING

4P

Select correct answer

1. GCP data (.gpx) is needed to be converted to...
(A) shp file, (B) csv file
2. How many flight blocks do we process in 1 time?
(A) 3 blocks, (B) 4 blocks
3. How many GCP for each block? (A) 1GCP, (B) 2GCP
4. What function to edit GCP? (A) basic editor, (B) advance editor

Q: GIS

4P

Select correct answer

1. GIS full name (A) Geospatial Information System
(B) Geospecial Intelligent Software
2. What type of data can GIS use?
(A) raster & vector, (B) vertex & Segment
3. what kind of data do we create in this work?
(A) CSI_P, CSI_L, CSI_A, (B) CSI_B, CSI_T, CSI_K
4. What function to make ROW boundary? (A) clip, (B) buffer

Q: FIELD SURVEY

4P

Select correct answer

1. What application do we use? (A) Atenza Map, (B) Avenza Map
2. What data we import to application?
(A) GeoTif & shp (B) GeoPDF & kml
3. What is the basic work in field survey?
(A) Add+move+delete+groundphoto
(B) Add+swipe+delete+GCPsurvey
4. What do we need to be careful? (A) citizen trouble, (B) weather

Q: DATA FINALIZATION

4P

► Select correct answer

1. Why to do data finalization?

To verify [UAV / GCP / Field] survey data.

To link CSI point and [aerial / portrait / ground] photo

1. What is the software used to rename?

[Bulk Rename / hulk Rename]

[K-file renamer / E-file renamer]



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



Attendant List for Training and Trainer

4/9

NAME	TITEL	OFFICE	DEP	3/18		3/21		3/22		4/1		4/3		4/4		4/9		7/9	
				Mon	Discussion	Thu	RMG, CSI-planning	Fri	UAV survey	Mon	Image processing	Wed	GIS	Thu	Field survey	Tue	Discussions	Fri	Finalization
An Menghour	Officer		ICD																
CHEA Samnang	Chief	ROW	RID																
Eam Bunthorn	Officer		RID																
Eam Sochea	Deputy Chief		PID																
HAY Chandara	Deputy Chief	ROW	RID																
KAING Theara	Staff		RID																
KHAY Saray	Deputy	ROW	RID																
LAM Soryaroth	Staff		RID																
Oum Sokvasey	Chief		ICD																
Peang Samoeun	Chief		ICD																
Sar Vathank	Officer		ICD																
SOK Chandy	Staff		RID																
Sokun Siseth	Deputy Chief		RID																

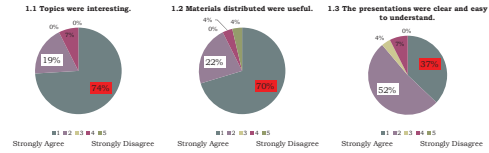
48th ROW TF Meeting

RID Meeting Room
8th August, 2019



Summary Results of Workshop Evaluation on 31st July 2019

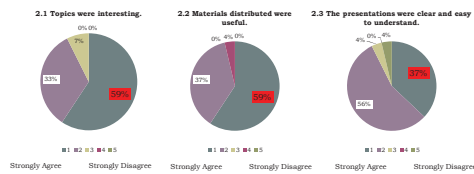
1st Presentation on Outline for ROW Management Methods



1.4 Comment (1):
- Please provide the effective procedure for smooth implementation.

2

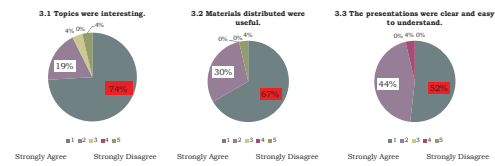
2nd Presentation on Field Survey for Current Status Identification (CSI)



2.4 Comment (0):
1- None

3

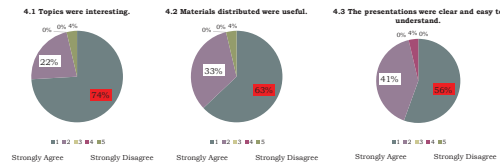
3rd Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches



3.4 Comment (0):
1- None

4

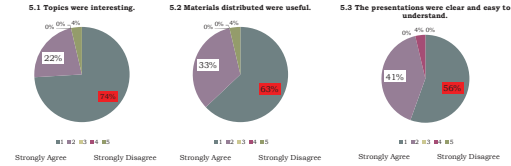
4th Presentation on ROW Management Activity and Plan



4.4 Comment (0):
1- None

5

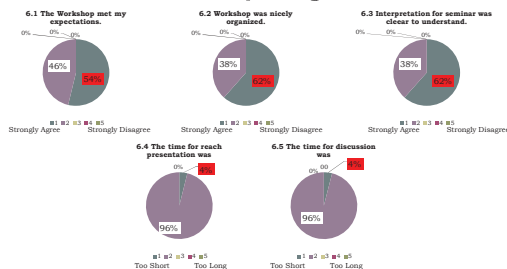
5th Presentation on Field Survey (CSI) and Patrol (IEP)



5.4 Comment (0):
1- None

6

6. Workshop Organization



7

Conclusion (1)



8. Aspects of workshop need to be improved for the next one:

- Should provide more material;
- Implementation of Field Survey (CSI) and Patrol (IEP);
- Agenda;
- Presentation in English should be more than this; and
- Well organized.

9. Other Specific Comments:

- Should continue this workshop for next time in order to gain more knowledge;
- Please JICA continues the project of ROW and Workshop;
- The trainings and implementation of this project so far are useful for Cambodia; please JICA continues this project;
- Workshop is good but Should be broadly disseminated; and
- Publish in Khmer and disseminate broadly; establish the law and sub-decree and clearly determine the city and rural area.

8

Results of Comprehensive Tests

No.	Organization	Total (score)/ 20/ 20
1	DPWT	17
2	DPWT	20
3	DPWT	19
4	DPWT	18
5	DPWT	19
6	DPWT	18
7	DPWT	19.5
8	DPWT	16
9	DPWT	19
10	DPWT	19
11	DPWT	19
12	DPWT	19
13	MPWT	18
14	MPWT	16.5
15	MPWT	18
16	MPWT	20
17	MPWT	20
18	MPWT	19
19	MPWT	19
20	MPWT	19
21	MPWT	19
22	MPWT	19
23	MPWT	19
24	MPWT	18
25	Student	17
26	Student	17
27	Student	15

- Workshop for Practice of ROW Management System
- Date: 31st July, 2019
- Venue: SUNWAY Hotel
- No. of Participants took the Test: 27 people

Q1: PURPOSE OF ROW MANAGEMENT

1P

► Select 1 **wrong** answer

- To sustain public land
- To prevent illegal encroachment
- To optimize construction
- To enhance road facility management
- To punish illegal users

No.	Organization	Q1 (1p): Purpose of ROW Management	No.	Organization	Q1 (1p): Purpose of ROW Management
1	DPWT	0	14	MPWT	0
2	DPWT	1	15	MPWT	0
3	DPWT	1	16	MPWT	1
4	DPWT	1	17	MPWT	1
5	DPWT	1	18	MPWT	1
6	DPWT	0	19	MPWT	0
7	DPWT	1	20	MPWT	0
8	DPWT	0	21	MPWT	0
9	DPWT	0	22	MPWT	0
10	DPWT	1	24	MPWT	1
11	DPWT	1	25	Student	1
12	DPWT	1	26	Student	1
13	MPWT	0	27	Student	1

(Q1) Ratio of correct answer (%) **51.85%**

Q2: FULL TITLE OF RMS COMPONENT

6P

► Write the full name of each abbreviation

- RMS: ROW Management System
- RMG: ROW Management Guideline
- CSI: Current Status Identification
- IEP: Illegal Encroachment Pretension
- RMM: ROW Management Map
- RMD: ROW Management Database

No.	Organization	Q2 (6p): Full name of each abbreviation	No.	Organization	Q2 (6p): Full name of each abbreviation
1	DPWT	6	14	MPWT	6
2	DPWT	6	15	MPWT	6
3	DPWT	6	16	MPWT	6
4	DPWT	6	17	MPWT	6
5	DPWT	6	18	MPWT	6
6	DPWT	6	19	MPWT	6
7	DPWT	6	20	MPWT	6
8	DPWT	6	21	MPWT	6
9	DPWT	4	22	MPWT	6
10	DPWT	6	23	MPWT	6
11	DPWT	6	24	MPWT	6
12	DPWT	6	25	Student	6
13	MPWT	6	26	Student	6
13	MPWT	6	27	Student	6

(Q2) Ratio of correct answer (%) **88.89%**

Q3: PURPOSE OF CSI

1P

► Select 1 **wrong** answer

- To identify current situation
- To create Right Of Way Management Map
- To create baseline for IEP classification
- To construct sustainable infrastructure

No.	Organization	Q3 (1p): Purpose of CSI	No.	Organization	Q3 (1p): Purpose of CSI
1	DPWT	1	14	MPWT	1
2	DPWT	1	15	MPWT	1
3	DPWT	1	16	MPWT	1
4	DPWT	0	17	MPWT	1
5	DPWT	1	18	MPWT	1
6	DPWT	1	19	MPWT	1
7	DPWT	1	20	MPWT	1
8	DPWT	1	21	MPWT	1
9	DPWT	1	22	MPWT	1
10	DPWT	1	23	MPWT	1
11	DPWT	1	24	MPWT	0
12	DPWT	1	25	Student	0
13	MPWT	1	26	Student	0
13	MPWT	1	27	Student	0

(Q3) Ratio of correct answer (%) **81.48%**

Q4: ROLE FOR EACH ACTIVITY IN CSI

6P

► Fill [✓] for correct authority for DPWT role

ITEM	MPWT	DPWT	LOCAL AUTHORITY	No.	Organization	Q4 (6p): Correct authority for DPWT	No.	Organization	Q4 (6p): Correct authority for DPWT
KICKOFF MTG	Arrangement	✓	[✓]	1	DPWT	5	14	MPWT	4
	Implementation	✓	[✓]	2	DPWT	6	15	MPWT	6
	Flight permission	✓	[✓]	3	DPWT	6	16	MPWT	6
UAV SURVEY	Flight plan	✓	[✓]	5	DPWT	6	18	MPWT	6
	UAV survey	✓	[✓]	6	DPWT	6	19	MPWT	6
	Supervision (for outsourcing)	✓	[✓]	8	DPWT	6	20	MPWT	6
OFFICE WORK	Image processing	✓	[✓]	9	DPWT	6	23	MPWT	6
	Mapping (data production)	✓	[✓]	10	DPWT	6	24	MPWT	6
	FS permission	✓	[✓]	11	DPWT	6	25	Student	6
FIELD SURVEY	Field survey	✓	[✓]	12	DPWT	6	26	Student	6
	Supervision	✓	[✓]	13	MPWT	6	27	Student	4
GIS	data finalization	✓	[✓]						

(Q4) Ratio of correct answer (%) **85.19%**

Q5: PURPOSE OF IEP

1P

► Select 1 **wrong** answer

- To select most suitable area for bridge construction
- To classify population inside ROW
- To prevent new encroachment
- To manage and maintain public land

No.	Organization	Q5 (1p): Purpose of IEP	No.	Organization	Q5 (1p): Purpose of IEP
1	DPWT	1	14	MPWT	1
2	DPWT	1	15	MPWT	1
3	DPWT	1	16	MPWT	1
4	DPWT	1	17	MPWT	1
5	DPWT	1	18	MPWT	1
6	MPWT	1	19	MPWT	1
7	DPWT	1	20	MPWT	1
8	DPWT	0	21	MPWT	1
9	DPWT	1	22	MPWT	1
10	DPWT	1	24	MPWT	1
11	DPWT	0	25	Student	1
12	DPWT	1	26	Student	1
13	MPWT	0	27	Student	1

(Q5) Ratio of correct answer (%) **85.19%**

Q6: ROLE FOR EACH ACTIVITY IN IEP

4P

► Fill [✓] for correct authority for DPWT role

ITEM	MPWT	DPWT	LOCAL AUTHORITY	MPWT C	DPWT R	No.	Organization	Q6 (4p): Correct authority for DPWT	No.	Organization	Q6 (4p): Correct authority for DPWT
Classification	1) PCM	✓	[✓]			1	DPWT	4	14	MPWT	3.5
	2) High school / University	✓	[✓]	✓		2	DPWT	4	15	MPWT	4
	3) Local government office	✓	[✓]	✓	✓	3	DPWT	4	16	MPWT	4
	1) Regular patrol	✓	[✓]	✓		4	DPWT	4	17	MPWT	4
	2) Collaborating w/ local authorities	✓	[✓]	✓		5	DPWT	4	18	MPWT	4
	3) Appealing to court	✓	[✓]	✓	✓	6	DPWT	4	19	MPWT	4
Monitoring & intervention	1) ROW permit	✓	[✓]	✓		7	DPWT	3.5	21	MPWT	4
	2) Access road permit	✓	[✓]	✓		8	DPWT	4	22	MPWT	4
	3) Record of "raising awareness"	✓	[✓]	✓		9	DPWT	4	23	MPWT	4
Permission & Registration	1) Record of "Monitoring"	✓	[✓]	✓		10	DPWT	4	24	MPWT	4
	2) Record of "Permission"	✓	[✓]	✓		11	DPWT	4	25	Student	4
	3) Record of "Monitoring"	✓	[✓]	✓		12	DPWT	4	26	Student	4
Supervision	3) Record of "Monitoring"	✓	[✓]	✓		13	MPWT	4	27	Student	3

(Q6) Ratio of correct answer (%) **81.48%**

Q7: WHAT IS THE TABLET & APP FOR?

1P

► Select 1 **wrong** answer

- for CSI UAV survey
- For CSI field survey
- For IEP patrol
- For IEP activity record

No.	Organization	Q7 (1p): What is the Tablet and App for?	No.	Organization	Q7 (1p): What is the Tablet and App for?
1	DPWT	0	14	MPWT	1
2	DPWT	1	15	MPWT	1
3	DPWT	0	16	MPWT	1
4	DPWT	0	17	MPWT	1
5	DPWT	0	18	MPWT	1
6	DPWT	0	19	MPWT	1
7	DPWT	1	20	MPWT	1
8	DPWT	1	21	MPWT	1
9	DPWT	1	22	MPWT	1
10	DPWT	0	23	MPWT	1
11	DPWT	1	24	MPWT	0
12	DPWT	1	25	Student	0
13	MPWT	1	26	Student	0
13	MPWT	1	27	Student	0

(Q7) Ratio of correct answer (%) **59.26%**

Conclusion (2)

(Q1) Ratio of correct answer (%)	(Q2) Ratio of correct answer (%)	(Q3) Ratio of correct answer (%)	(Q4) Ratio of correct answer (%)	(Q5) Ratio of correct answer (%)	(Q6) Ratio of correct answer (%)	(Q7) Ratio of correct answer (%)
51.85	88.89	81.48	85.19	85.19	81.48	59.26

Almost of the participants got the good scores for the test. However, more than half of them could not do well for **Q1 and Q7**.

Based on the observation, participants got confused with the questions. Participants were asked to select **ONE WRONG** Answer; however, they selected the **RIGHT** Answer.

17

Overall Conclusion

For the NEXT Workshops:

- > **Material and Presentation should be in Khmer for better understanding;**
- > **Presenters should be rotated among the ROW TF members or MPWT officials;**
- > **For the smooth presentation, Presenters should prepare or check the material in advance; and**
- > **We need to provide the clear instruction or explanation on each question for the test and on the evaluation sheet for the next Workshop.**

18

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

50th ROW TF Meeting

Summary Results of Workshop Evaluation on 29th and 30th August 2019

RID Meeting Room
6th September, 2019

1

Summary Results of Workshop Evaluation on 29th and 30th August 2019

1st Presentation on Outline for ROW Management Methods

1.1 Topics were interesting. 1.2 Materials distributed were useful. 1.3 The presentations were clear and easy to understand.

1.4 Comment (7):
- Please provide the material in Khmer so it is easy to read and understand.(2)
- Please provide clear guidelines/document specifying the law and sub-decrees, the participants are hard to catch up the presentation.(2)
- ROW management works have been implemented based on the techniques but there is lack of law enforcement. Need to apply the law on the local authority who are careless on the illegal ROW encroachment.
- If possible, should build the canals along the roads for better road condition and ROW encroachment prevention.
- Reduce the resettlement cost during the development.

2nd Presentation on Field Survey for Current Status Identification (CSI)

2.1 Topics were interesting. 2.2 Materials distributed were useful. 2.3 The presentations were clear and easy to understand.

2.4 Comment (3):
- Presentation Material should be in Khmer.
- Want to have the training on Drone Flight to all officials at all DPWTs.
- To study the CSI, need the collaboration from local authorities in order to avoid the repeated problems that have no solution.

3rd Presentation on Type of Illegal Encroachment Prevention (IEP) Approaches

3.1 Topics were interesting. 3.2 Materials distributed were useful. 3.3 The presentations were clear and easy to understand.

3.4 Comment (5):
- Presentation Material should be in Khmer.
- The presentation is not smooth enough and there is less explanation on some points.(2)
- Without clear definition and boundary between urban and non-urban areas and lack of legal document, the implementation on ROW management is very difficult.(2)

4th Presentation on ROW Management Activity and Plan

4.1 Topics were interesting. 4.2 Materials distributed were useful. 4.3 The presentations were clear and easy to understand.

4.4 Comment (3):
- The presentation is a bit short. The action plan is not described clearly.
- Find the budget for the regular patrol works and Pole installation at missing places and establish the joint committee with local authorities to identify the problems at the dense or urban areas.
- All relevant units/institutes at provinces and cities have not yet well cooperated on the ROW management.

5th Presentation on Field Survey (CSI) and Patrol (IEP)

5.1 Topics were interesting. 5.2 Materials distributed were useful. 5.3 The presentations were clear and easy to understand.

5.4 Comment (0):
1- None

6. Workshop Organization

6.1 The Workshop met my expectations. 6.2 Workshop was nicely organized. 6.3 Interpretation for seminar was clear to understand.

6.4 The time for reach presentation was. 6.5 The time for discussion was.

Conclusion (1)

7. Overall, how do you rate the workshop?

8. Aspects of workshop need to be improved for the next one:

- No need to improve; acceptable.
- Interested in the workshop and gain knowledge.
- Would like to have more participants.
- Need to carefully control the time for each section.
- The hand-out material and organization should be in Khmers. (5)
- More explanation/training for UAV and Field Survey(CSI) and Patrol (IEP). (3)
- Please explain one software or any App in detail that make sure trainees can use them and apply to the job.(2)

9. Other Specific Comments:

- Request to provide workshops more often, more knowledge, real practice and for relevant institutions.(8)
- Please create the group in the Telegram, it is easy for DPWT officials to ask any question.
- Document and lesson from this ROW Workshop is good but how about the implementation.(2)
- In TabletApp, it is needed to set the Alert Notification for patrol schedule on 2nd, 3rd or 4th Patrol.
- Next workshop should be prepared the material for making better understanding, implementation and weather.(3)

Results of Comprehensive Tests

- Workshop for Practice of ROW Management System
- Date: 29th and 30th August 2019
- Venue: Phnom Penh Hotel
- No. of Participants took the Test: 35 people (without TF Members)

29 th August 2019			30 th August 2019		
No.	Organization	Total correct (%) (20/20)	No.	Organization	Total correct (%) (20/20)
1	MPWVT	20	1	MPWVT	19
2	MPWVT	20	2	MPWVT	17.5
3	MPWVT	19	3	DPWVT	13
4	MPWVT	19	4	DPWVT	10.5
5	MPWVT	19	5	DPWVT	12
6	MPWVT	18	6	DPWVT	20
7	DPWVT	16.5	7	DPWVT	16.5
8	DPWVT	17	8	DPWVT	19
9	DPWVT	19	9	DPWVT	19.5
10	DPWVT	13.5	10	DPWVT	16
11	DPWVT	19	11	DPWVT	18.5
12	DPWVT	18	12	DPWVT	13.5
13	DPWVT	20	13	DPWVT	15
14	DPWVT	20	14	DPWVT	11.5
15	DPWVT	18	15	DPWVT	13.5
16	DPWVT	16	16	DPWVT	6.5
17	DPWVT	19	17	DPWVT	14
18	DPWVT	19	18	DPWVT	15.5

Ratio of Score Result: more than 70% correct (%) 77.14%

Q1: PURPOSE OF ROW MANAGEMENT

1P

■ Select 1 **wrong** answer

- To sustain public land
- To prevent illegal encroachment
- To optimize construction
- To enhance road facility management
- To punish illegal users

29 th August 2019			30 th August 2019		
No.	Organization	Q1 (1pt) Purpose of ROW Management	No.	Organization	Q1 (1pt) Purpose of ROW Management
1	MPWVT	1	1	MPWVT	1
2	MPWVT	1	2	MPWVT	1
3	MPWVT	1	3	DPWVT	1
4	MPWVT	1	4	DPWVT	1
5	MPWVT	1	5	DPWVT	1
6	MPWVT	0	6	DPWVT	1
7	DPWVT	0	7	DPWVT	1
8	DPWVT	0	8	DPWVT	0
9	DPWVT	0	9	DPWVT	1
10	DPWVT	0	10	DPWVT	1
11	DPWVT	1	11	DPWVT	1
12	DPWVT	1	12	DPWVT	1
13	DPWVT	1	13	DPWVT	0
14	DPWVT	1	14	DPWVT	0
15	DPWVT	0	15	DPWVT	0
16	DPWVT	0	16	DPWVT	1
17	DPWVT	0	17	DPWVT	1
			18	DPWVT	1

(Q1) Ratio of correct answer (%) 62.86%

Q2: FULL TITLE OF RMS COMPONENT

6P

■ Write the full name of each abbreviation

- RMS: ROW Management System
- RMG: ROW Management Guideline
- CSI: Current Status Identification
- IEP: Illegal Encroachment Pretension
- RMM: ROW Management Map
- RMD: ROW Management Database

29 th August 2019			30 th August 2019		
No.	Organization	Q2 (6pt) Full name of each abbreviation	No.	Organization	Q2 (6pt) Full name of each abbreviation
1	MPWVT	6	1	MPWVT	6
2	MPWVT	6	2	MPWVT	6
3	MPWVT	6	3	DPWVT	6
4	MPWVT	6	4	DPWVT	2
5	MPWVT	6	5	DPWVT	4
6	MPWVT	6	6	DPWVT	6
7	DPWVT	6	7	DPWVT	6
8	DPWVT	6	8	DPWVT	6
9	DPWVT	6	9	DPWVT	6
10	DPWVT	3	10	DPWVT	6
11	DPWVT	6	11	DPWVT	6
12	DPWVT	4	12	DPWVT	6
13	DPWVT	6	13	DPWVT	6
14	DPWVT	6	14	DPWVT	6
15	DPWVT	6	15	DPWVT	6
16	DPWVT	6	16	DPWVT	3
17	DPWVT	6	17	DPWVT	5
			18	DPWVT	5

(Q2) Ratio of correct answer (%) 80.00%

Q3: PURPOSE OF CSI

1P

■ Select 1 **wrong** answer

- To identify current situation
- To create Right Of Way Management Map
- To create baseline for IEP classification
- To construct sustainable infrastructure

29 th August 2019			30 th August 2019		
No.	Organization	Q3 (1pt) Purpose of CSI	No.	Organization	Q3 (1pt) Purpose of CSI
1	MPWVT	1	1	MPWVT	1
2	MPWVT	1	2	MPWVT	1
3	MPWVT	0	3	DPWVT	1
4	MPWVT	2	4	DPWVT	1
5	MPWVT	0	5	DPWVT	1
6	MPWVT	1	6	DPWVT	1
7	DPWVT	1	7	DPWVT	0
8	DPWVT	1	8	DPWVT	1
9	DPWVT	1	9	DPWVT	1
10	DPWVT	1	10	DPWVT	0
11	DPWVT	1	11	DPWVT	0
12	DPWVT	1	12	DPWVT	0
13	DPWVT	1	13	DPWVT	1
14	DPWVT	1	14	DPWVT	0
15	DPWVT	0	15	DPWVT	1
16	DPWVT	1	16	DPWVT	0
17	DPWVT	1	17	DPWVT	0
			18	DPWVT	1

(Q3) Ratio of correct answer (%) 68.57%

Q4: ROLE FOR EACH ACTIVITY IN CSI

6P

■ Fill [✓] for correct authority for DPWVT role

ITEM	29 th August 2019		30 th August 2019	
	MPWVT	DPWVT	LOCAL AUTHORITY	OTHER
KICKOFF MTG	Arrangement	✓ [✓]		
	Implementation	✓ [✓]	✓	
	Flight permission	✓ [✓]	✓	
UAV SURVEY	Flight plan	✓ [✓]		
	UAV survey	✓ [✓]		
	Supervision (for outsourcing)	✓ [✓]		
OFFICE WORK	Image processing	✓ [✓]		
	Mapping (data production)	✓ [✓]		
	FS permission	✓ [✓]	✓	
FIELD SURVEY	Field survey	✓ [✓]		
	Supervision	✓ [✓]		
GIS	data finalization	✓ [✓]		

29 th August 2019			30 th August 2019		
No.	Organization	Q4 (6pt) Correct authority for DPWVT	No.	Organization	Q4 (6pt) Correct authority for DPWVT
1	MPWVT	6	1	MPWVT	6
2	MPWVT	6	2	MPWVT	4
3	MPWVT	6	3	DPWVT	2
4	MPWVT	6	4	DPWVT	3
5	MPWVT	6	5	DPWVT	3
6	MPWVT	5	6	DPWVT	3
7	DPWVT	5	7	DPWVT	5
8	DPWVT	5	8	DPWVT	6
9	DPWVT	6	9	DPWVT	4
10	DPWVT	5	10	DPWVT	4
11	DPWVT	6	11	DPWVT	6
12	DPWVT	6	12	DPWVT	1
13	DPWVT	6	13	DPWVT	4
14	DPWVT	6	14	DPWVT	2
15	DPWVT	6	15	DPWVT	2
16	DPWVT	5	16	DPWVT	1
17	DPWVT	5	17	DPWVT	4
			18	DPWVT	4

(Q4) Ratio of correct answer (%) 48.57%

Q5: PURPOSE OF IEP

1P

■ Select 1 **wrong** answer

- To select most suitable area for bridge construction
- To classify population inside ROW
- To prevent new encroachment
- To manage and maintain public land

29 th August 2019			30 th August 2019		
No.	Organization	Q5 (1pt) Purpose of IEP	No.	Organization	Q5 (1pt) Purpose of IEP
1	MPWVT	1	1	MPWVT	1
2	MPWVT	1	2	MPWVT	1
3	MPWVT	1	3	DPWVT	1
4	MPWVT	1	4	DPWVT	1
5	MPWVT	1	5	DPWVT	1
6	MPWVT	1	6	DPWVT	1
7	DPWVT	1	7	DPWVT	1
8	DPWVT	1	8	DPWVT	1
9	DPWVT	1	9	DPWVT	1
10	DPWVT	1	10	DPWVT	1
11	DPWVT	1	11	DPWVT	1
12	DPWVT	0	12	DPWVT	1
13	DPWVT	1	13	DPWVT	1
14	DPWVT	1	14	DPWVT	0
15	DPWVT	1	15	DPWVT	1
16	DPWVT	0	16	DPWVT	0
17	DPWVT	1	17	DPWVT	1
			18	DPWVT	1

(Q5) Ratio of correct answer (%) 91.43%

Q6: ROLE FOR EACH ACTIVITY IN IEP

4P

■ Fill [✓] for correct authority for DPWVT role

ITEM	29 th August 2019		30 th August 2019	
	MPWVT	DPWVT	LOCAL AUTHORITY	OTHER
Classification	✓ [✓]			
	1) PCN	✓ [✓]		
	2) High school / University	✓ [✓]		✓
	3) Local government office	✓ [✓]	✓	
Raise awareness	1) Regular patrol	✓ [✓]		
	2) Collaborating w/ local authorities	✓ [✓]	✓	
	3) Appealing to court	✓ [✓]	✓	
	1) ROW permit	✓ [✓]		
Permission & Registration	2) ROW registration	✓ [✓]	✓	
	3) Access road permit	✓ [✓]		
	1) Record of "raising awareness"	✓ [✓]		
	2) Record of "Monitoring"	✓ [✓]		
Supervision	3) Record of "Permission"	✓ [✓]		

29 th August 2019			30 th August 2019		
No.	Organization	Q6 (4pt) Correct authority for DPWVT Role	No.	Organization	Q6 (4pt) Correct authority for DPWVT Role
1	MPWVT	4	1	MPWVT	4
2	MPWVT	4	2	MPWVT	3.5
3	MPWVT	4	3	DPWVT	1
4	MPWVT	4	4	DPWVT	1.5
5	MPWVT	4	5	DPWVT	2
6	MPWVT	4	6	DPWVT	4
7	DPWVT	3.5	7	DPWVT	3.5
8	DPWVT	3	8	DPWVT	4
9	DPWVT	4	9	DPWVT	3.5
10	DPWVT	3.5	10	DPWVT	2
11	DPWVT	4	11	DPWVT	3.5
12	DPWVT	4	12	DPWVT	3.5
13	DPWVT	4	13	DPWVT	2
14	DPWVT	4	14	DPWVT	2.5
15	DPWVT	4	15	DPWVT	3.5
16	DPWVT	4	16	DPWVT	1.5
17	DPWVT	4	17	DPWVT	3
			18	DPWVT	3.5

(Q6) Ratio of correct answer (%) 48.57%

Q7: WHAT IS THE TABLET & APP FOR?

1P

■ Select 1 **wrong** answer

- for CSI UAV survey
- For CSI field survey
- For IEP patrol
- For IEP activity record

29 th August 2019			30 th August 2019		
No.	Organization	Q7 (1pt) What is the Tablet and App for?	No.	Organization	Q7 (1pt) What is the Tablet and App for?
1	MPWVT	1	1	MPWVT	0
2	MPWVT	1	2	MPWVT	1
3	MPWVT	1	3	DPWVT	1
4	MPWVT	1	4	DPWVT	1
5	MPWVT	1	5	DPWVT	1
6	MPWVT	1	6	DPWVT	1
7	DPWVT	0	7	DPWVT	1
8	DPWVT	0	8	DPWVT	1
9	DPWVT	1	9	DPWVT	1
10	DPWVT	1	10	DPWVT	1
11	DPWVT	0	11	DPWVT	1
12	DPWVT	1	12	DPWVT	1
13	DPWVT	1	13	DPWVT	1
14	DPWVT	1	14	DPWVT	1
15	DPWVT	1	15	DPWVT	0
16	DPWVT	0	16	DPWVT	0
17	DPWVT	1	17	DPWVT	0
			18	DPWVT	0

(Q7) Ratio of correct answer (%) 74.29%

Conclusion (2)

(Q1) Ratio of correct answer (%)	(Q2) Ratio of correct answer (%)	(Q3) Ratio of correct answer (%)	(Q4) Ratio of correct answer (%)	(Q5) Ratio of correct answer (%)	(Q6) Ratio of correct answer (%)	(Q7) Ratio of correct answer (%)
62.86	80.00	68.57	48.57	91.43	48.57	74.29
Results on 31 st July 2019						
51.85	88.89	81.48	85.19	85.19	81.48	59.26

Almost of the participants got the good scores for the test. However, more than half of them could not do well for **Q4 and Q6**.

Based on the observation between previous Workshop, the participants from DPWT **have not fully understood role and responsibility related ROW Management**. Because there are different province from target area of the pilot project.

17

Overall Conclusion

For the NEXT Workshops:

- > Material and Presentation should be in Khmer for better understanding;
- > Presenters will be rotated among the ROW TF members or MPWT officials;
- > For the smooth presentation, Presenters should prepare or check the material in advance;
- > Contents of workshop should be considered for better understanding; and,
- > Invitation of relevant organization should be considered to spread the knowledge in future.

18

