

## TO CR of JICA Cambodia OFFICE

## PROJECT MONITORING SHEET

**Project Title : The Project on Capacity Development for Mining Administration****Version of the Sheet: Ver.3 (Term: January, 2015 - February, 2017)****Name: Sakae KASHIMA****Title: Project General Manager****Submission Date:****I. Summary****1. Progress****1-1 Progress of Inputs**

Inputs	Plans as of XX	Actual as of February 2017
Experts	29.20 MM 6 Short term expert ( 1. General manager / Mine safety system, 2. Vice general manager /Mine safety system, 3. Mine safety law, 4. Database manager, 5. Database of geology & mineral resources, 6. Database of Tenement, mine & mine safety	29.20 MM 8 Short term expert ( 1. General manager / Mine safety system, 2. Vice general manager /Mine safety system, 3. Mine safety law, 4. Mine safety law, 5. Database manager, 6. Database of geology & mineral resources, 7. Database of Tenement, mine & mine safety, 8. Database of server
Trainees Received	The training program on mine safety law will be planned and implemented for six trainees over a period of approximately two weeks as part of this work.	The training program had been carried out between from 8th to 21st May 2016 for six trainees
Equipments	Water quality monitoring instrument, Sound-level monitoring instrument, Vibration-level meter, Dust meter, Weather observation instruments, Inspection-site recording instruments, Printer, Copier, Whiteboards	Water quality monitoring instrument, Sound-level monitoring instrument, Vibration-level meter, Dust meter, Weather observation instruments and Inspection-site recording instruments send from Japan on 15th April 2016, Printer, Copier and Whiteboards already bought on January 2015
Others		
Japan side Project Budget	About 134 million yen	About 134 million yen
Cambodia side Operational Expenses	- Assigned working team members - Office space including its utility cost	- Assigned working team members - Office space including its utility cost

**1-2 Progress of Activities**

**JICA Experts gave information about mine safety through lectures by using data and video for mining safety technologies and several times OJT for mine safety inspections, and working team members of GDMR well understood them.**

**1-3 Achievement of Output**

Output/Indicators		Achievement Level (%)		Activities (ACT)	Status
		Indicator	Activities		
Output-1: To formulate the draft law of mine safety and strengthen the enforcement system of the law					
1-1	Formulate the working team for drafting the mine safety law	100	100		OT
1-2	Draft the mine safety law	100	100	Draft of Mine Safety Law based on Japanese Mine Safety Law	OT
		100	100	Draft of Mine Safety Regulation based Japanese Mine Safety regulation	OT
		100	100	Draft of Regulation on Procedures and Items of in Mine Safety Law and its Regulations	OT
1-3	Prepare the annual inspection plan according to the drafted law	100	100	Designing a Policy for an Annual Inspection Plan at Mine	OT
1-4	Define the responsibilities of safety staff at the GDMR and DME	100	100	Define the responsibilities of safety staff at the GDMR and DME	OT
		100	100	Reporting process on inspection	OT
		100	100	Draft of Mine Safety Inspection Manual	OT
		100	100	Draft of Mine Safety Inspection Rule	OT
		100	100	Draft of Manual on Measurement and Evaluation of Dust concentration	OT
100	100	Draft of Manual on Risk Management for Mine Safety	OT		
1-5	GDMR assigns the staff responsible for mine safety at GDMR and define the responsibilities of each staff about safety work	100	100	Support for Establishment of Supervised Governmental Structures that are Suitable for the Enforcement of Mine Safety Law and its Regulations	OT
1-6	Prepare the format of inspection report on mine safety	100	100	Including draft of Mine Safety Inspection rule	OT
1-7	Carry out OJT on practice of inspection targeting the staff responsible for mine safety at GDMR and DME	100	100	Handling the equipment for inspection at open-pit mine, General inspection at open-pit and underground mine, <u>special Insection at open-pit mine (An additional item)</u>	OT
1-8	Prepare the annual inspection plan for next year based on the inspection results	100	100	Designing a Policy for an Annual Inspection Plan at Mine	OT

PM Form 3-1 Monitoring Sheet Summary

Output 2: To establish a database for mining management					
2-1	Formulate the working team for building a database	100	100		OT
2-2	Review the mine information that GDMR holds		100		OT
2-3	Define the detailed items of cadastral information, information relating to mines and relating to mineral resources to be input into the database		100		OT
2-4	Define management system of database		100	GDMR assigns staff in charge of database and frequency of update, etc.	OT
2-5	Input the cadastral information into the database		100		OT
2-6	Input the information relating to mines		100	such as mine site, deposit-type-size-volume, operation information, production data, mine-safety information, mine-environmental information, etc.	OT
2-7	Input the information relating to mineral resources		100	such as mine site, deposit-type-size-volume, operation information, production data, mine-safety information, mine-environmental information, etc.	OT
2-8	Define the data items necessary to enforce the mine safety law and input those data into the database		30		SFT
2-9	Prepare a manual of operation and maintenance of database		100		OT
2-10	Update the database according to the manual		95		SFT

PM Form 3-1 Monitoring Sheet Summary

Output 3: To enhance the capacity of human resources of GDMR to maintain mine safety practices sustainably					
3-1	Select the candidates from GDMR staff to participate in the short-term training program in Japan	100	100		OT
3-2	Participate in the short-term training program in Japan	100	100		OT
3-3	Organize the sharing workshop and give feedback about the results of the training program to other staff of GDMR	100	100		OT
3-4	Select the candidates from GDMR staff to participate in the master degree course of mine in Japan	50	50	3 person candidate from GDMR staff to participate in the master degree course of mine in Japan	DL
3-5	Participate in the master degree course at the graduate school in Japan including the internship program at Japanese private companies	0	0	1 person started from late march 2016	SFT
3-6	Organize the sharing workshop and give feedback about the results of the master degree course to other staff of GDMR	0	0		SFT



**1-4 Achievement of the Project Purpose**

Project Purpose/Indicators	Achievement (%) ACT	Situation	Expended Time of achievement
<b>Project Purpose: To enhance the capacity of mine safety at GDMR</b>			
1.	100	Drafting of Mine Safety Law, Mine Safety Regulation, Regulation on procedures and items of mentioned provide in mine safety law, some manuals for inspection were completed. Training for mine inspection by OJT were completed. Deliberation of Mine safety Law in MME was finished but establishment of it in the Diet is not yet,	After establish the Mine Safety Law at the Diet.
2.	90	GIS database was developed. GIS database manual for management and operation was developed. The C/Ps obtained essential techniques to create and operate the GIS database through OJT at the Database Working Team Meetings.	
2.	17	Short term training was completed. Long term training was delay, 1 person was on going, 2 persons were candidated by GDMR but not start yet.	2 persons training start this spring, after 2 persons candidate by GDMR are next time.

**1-5 Changes of Risks and Actions for Mitigation**

**1-6 Progress of Actions undertaken by JICA**

**1-7 Progress of Actions undertaken by Gov. of Cambodia**

At the moment, Mine Safety Law (draft) was presented from GDMR to Ministry of Mineral and Energy (MME), and deliberation of it in MME was completed.

But the approval of Minister is not yet.

**1-8 Progress of Environmental and Social Considerations (if applicable)**

**1-9 Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)**

**1-10 Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)**

**2. Delay of Work Schedule and/or Problems (if any)**

**2-1 Detail**

**2-2 Cause**

**2-3 Action to be taken**

**2-4 Roles of Responsible Persons/Organization (JICA, Gov. of●●,etc.)**

HIS Tina DITH, Secretary of State Ministry of Mines and Energy

**3. Modification of the Project Implementation Plan**

**3-1 PO**

PO of the project is prepared. It is attached as Monitoring Sheet Form 3-3.

**3-2 Other modifications on detailed implementation plan**

Work plan modified and approved at JCC hold on 21<sup>st</sup> December 2015.

*(Remarks: The amendment of R/D and PDM (title of the project, duration, project site(s), target group(s), implementation structure, overall goal, project purpose, outputs, activities, and input) should be authorized by JICA HDQs. If the project team deems it necessary to modify any part of R/D and PDM, the team may propose the draft.)*

**4. Preparation of Gov. of ●● toward after completion of the Project**

**II. Project Monitoring Sheet I & II as Attached**

**WORK PLAN  
FOR  
THE PROJECT ON CAPACITY DEVELOPMENT FOR MINING ADMINISTRATION  
IN  
THE KINGDOM OF CAMBODIA**

**AGREED UPON BETWEEN  
MINISTRY OF MINES AND ENERGY  
AND  
JAPAN INTERNATIONAL COOPERATION AGENCY**

Phnom Penh, 23 January 2015

萩島 孝

Mr. Sakae Kashima  
General Manager of  
JICA Short-Term Experts  
JAPAN



HE. Dith Tina  
Project Director  
Ministry of Mines and Energy  
Kingdom of Cambodia

# 1 Project Description

## 1.1 Background

The Royal Government of Cambodia (RGC) is intending to promote the mineral resources sector to stimulate the economic growth and contribute to the reduction of the poverty in the country.

Currently, there are more than 140 Mineral Exploration licenses, around 10 Mining licenses, and about 300 Construction Material licenses. In a few years, some of these companies, who have Mineral Exploration licenses, will apply for mining licenses. GDMR (Fig.1) will absolutely need the effective management of mining operations to these companies' activities. To achieve this mission, the consistent support and involvement of the JICA's assistance will be indispensable for GDMR.

During the last 5 years, under the JICA and Japan Oil, Gas and Metals National Corporation expert's supports, GDMR and some companies' staff have learned about the basic technology of exploration, mining, processing, environmental protection and technical regulations concerning the mine safety.

In order to prevent accidents and health hazards caused by mining activities, the completion of law on mine safety and health is the main objective of GDMR/MME in the next few years.

In addition, there are also mine pollution problems caused by the small-scale mining in some places in Cambodia.

Therefore, GDMR needs to strengthen its human resources and increase capacity to manage safe mining operation and environmental safeguard effectively.

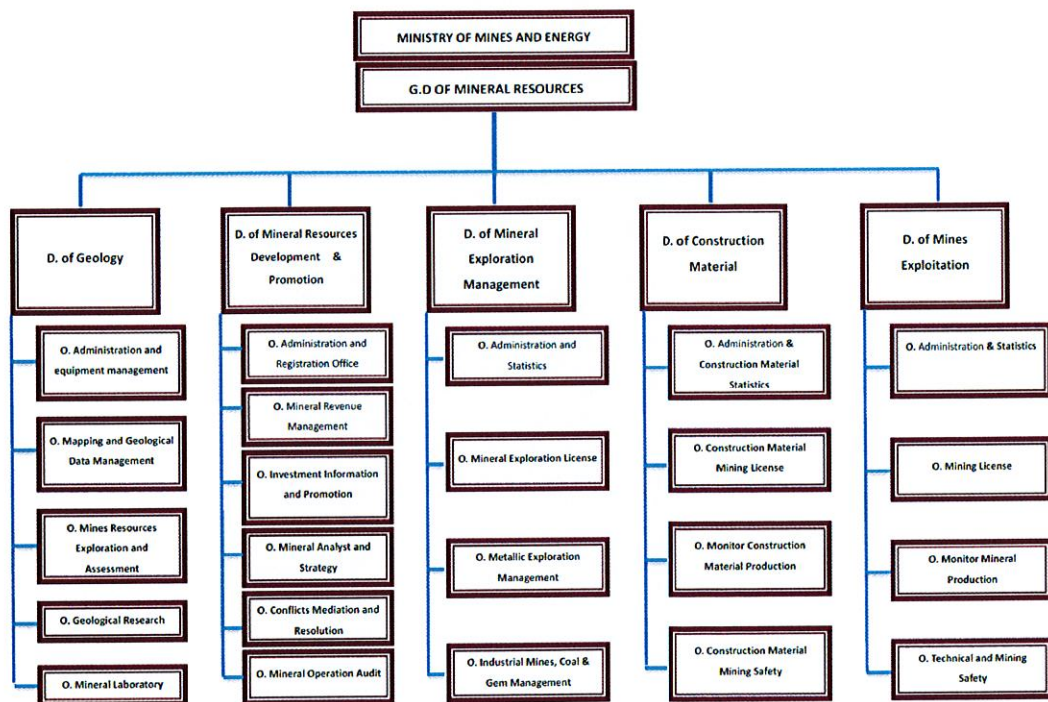


Fig.1 Organization of GDMR





## 1.2 Outline of the Project

### 1. Title of the Project

Project on Capacity Development for Mining Administration

### 2. Overall Goal

Mine development is safely carried out in Cambodia

### 3. Project Purpose

To enhance the capacity of mine safety at GDMR

### 4. Outputs

- (1) To formulate the draft law of mine safety and strengthen the enforcement system of the law
- (2) To establish a database for mining management
- (3) To enhance the capacity of human resources of GDMR to maintain mine safety practices sustainably

### 5. Activities

#### (1) To formulate the draft mine safety law and strengthen the enforcement system of the law

<Formulation of the draft of mine safety law>

- 1-1 Formulate the working team for drafting mine safety law
- 1-2 Draft the mine safety law (including the items of submission of mine operation plan and waste water quality standard, etc.)

<Establishment of enforcing system of mine safety law>

- 1-3 Prepare the annual inspection plan according to the drafted law (including the items of inspections)
- 1-4 Define the responsibilities of safety staff at GDMR and DME (responsibilities, reporting process, etc.)
- 1-5 GDMR assigns the staff responsible for mine safety at GDMR and define the responsibilities of each staff about safety work
- 1-6 Prepare the format of inspection report on mine safety

<Strengthening of enforcing the mine safety law (strengthening of capacity of inspections)>

- 1-7 Carry out OJT on practice of inspection targeting the staff at GDMR and DME
- 1-8 Prepare the annual inspection plan for next year based on inspection results

#### (2) To establish a database for mining management

- 2-1 Formulate the working team for building a database
- 2-2 Review the mine information that GDMR holds
- 2-3 Define the detailed items of cadastral information, information relating to mines and relating to mineral resources to be input into the database
- 2-4 Define management system of database (GDMR assigns staff in charge of database and frequency of update, etc.)
- 2-5 Input the cadastral information into the database
- 2-6 Input the information relating to mines (such as mine site, deposit-type-size-volume, operation

- information, production data, mine safety information, mine environmental information, etc.)
- 2-7 Input the information relating to mineral resources (such as geology, RS analysis information, exploration information, ore volume, etc.)
  - 2-8 Define the data items necessary to enforce the mine safety law and input those data into the database
  - 2-9 Prepare a manual of operation and maintenance of database
  - 2-10 Update the database according to the manual

(3) To enhance the capacity of human resources of GDMR to maintain mine safety practices sustainably

<Short-term Training Program >

- 3-1 Select the candidates from GDMR staff to participate in the short-term training program in Japan
- 3-2 Participate in the short-term training program in Japan
- 3-3 Organize the sharing workshop and give feedback about the results of the training program to other staff of GDMR

<Long-term Training Program >

- 3-4 Select the candidates from GDMR staff to participate in the master degree course of mine in Japan
- 3-5 Participate in the master degree course at the graduate school in Japan including the internship program at Japanese private companies
- 3-6 Organize the sharing workshop and give feedback about the results of the master degree course to other staff of GDMR

6. Project Site

Project activity will be mainly implemented in MME. However the part of the Project activities is carried out in Mining site.

7. Counterpart

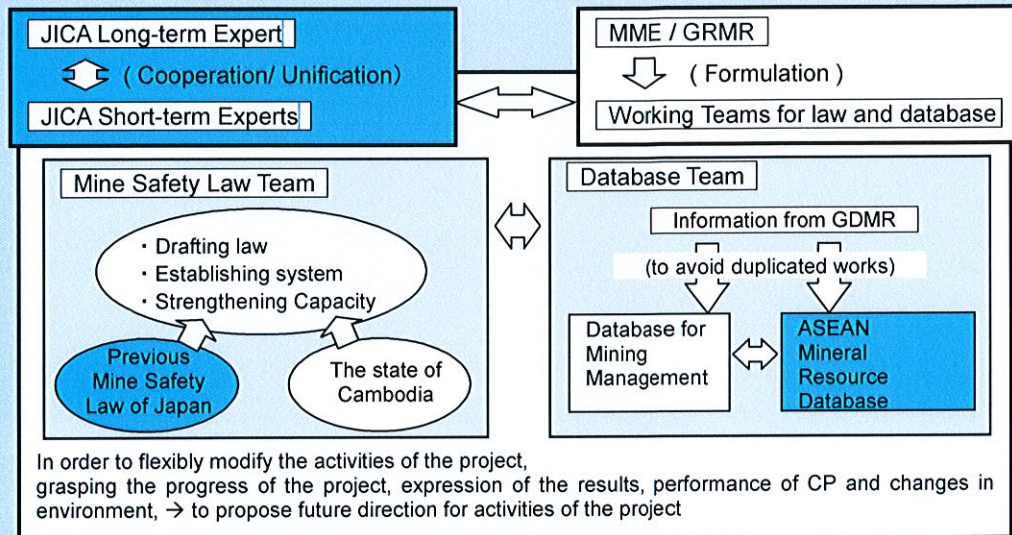
GDMR: General Department of Mineral Resources

MME : Ministry of Mines and Energy



# Project on Capacity Development for Mining Administration

## Implementation of Project



- |   |  |
|---|--|
| <p>JICA Short-term Experts</p> <p>To provide equipments for mine inspection (Considering maintenance by GDMR)</p> | <p>MME / GRMR</p> <p>To provide Hard/Software for database which can be introduced by GDMR</p> |
|---|--|
- > To Dec. 2015 / drafting law, establishing enforcing system, establishing database for mine management
  - > To Dec. 2016 / OJT of inspection work for GDMR and revising system and manual

## Goal and Outputs

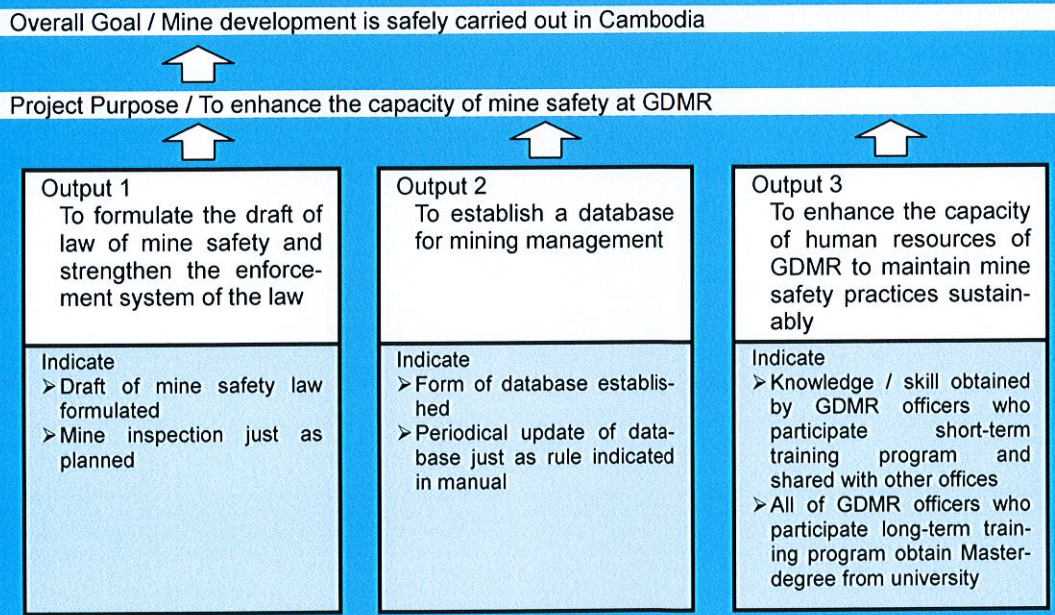


Figure 2 Outline of the Project

7. 9. 9.



## 2. Basic Policy on Project Implementation

### 2.1 Close collaboration with a Long-term expert

The Project on Capacity Development for Mining Administration in Cambodia, which is covered by this work, and the separately signed agreement on the Dispatch of a Long-term Expert for Technical Guidance on Mine Safety Operations (for two years from November 2014) will be implemented based on the Record of Discussion (“RD”) agreed upon between MME and JICA in August 2014. As a long-term expert will provide routine technical guidance to the Project Counterparts (“CPs”) at GDMR, JICA Short-term Experts (“STEs”) will work closely with him in the execution of the work and ensure that his input and this work are coordinated for effective and efficient project implementation.

### 2.2 Drafting a mine safety law in Cambodia based on the previous Mine Safety Law of Japan

#### 1) Background to the introduction of the previous Mine Safety Law of Japan

In Japan, the Mine Safety Law was enacted in 1949 for the purposes of preventing injuries to mine workers, preventing mine pollution, preserving mineral resources and maintaining mining facilities. However, in response to serious accidents and incidents involving mining-related damages during the development of mining industry driven by the nation’s economic growth, the Law was repeatedly reviewed and amended to facilitate the determination of causes and prevent any recurrence of similar issues.

The substance of the Law was significantly revised in 2004 to engineer a move from the previous focus on state supervision and guidance by administrative agencies to a composition and content that emphasize the establishment of independent safety by mining rights owners.

Australia and Canada as known in mining advanced countries have also adopted the thought of independent safety in the substance of mine safety law.

As it is commonly seen in Indo-Chinese countries, Cambodia lacks a legal system on mine safety. There have also been reports of illegal mining causing environmental pollution problems. Accordingly, based on comparison with and examination of the Mine Safety Law of Japan, the previous Mine Safety Law and its regulations (which were in effect up until 2004 in line with measures for state supervision and guidance by administrative agencies) are considered applicable for Cambodia. It is therefore considered appropriate to introduce the law on mine safety focusing on supervision and guidance led by administrative agencies.

#### 2) Primary philosophies of the draft Mine Safety Law

The draft Mine Safety Law of Cambodia will be based on the four primary philosophies of the previous Mine Safety Law of Japan: prevention of injuries to mine workers, prevention of mine pollution, preservation of mineral resources and maintenance of mining facilities.

#### 3) Drafting Mine Safety Regulations

As stipulations necessary for the effective and efficient enforcement of a legal system, drafts of the Mine Safety Law and related regulations will be drawn up under this project.

### 2.3 Collaboration with the ASEAN mineral database project

Since 2014, JICA has collaborated with the Geological Survey of Japan (run by the National Institute of Advanced Industrial Science and Technology, or AIST) to support the development of a web-based GIS database on mineral resources in ASEAN countries (including Cambodia). The database includes a geological map and data on mineral resources, mines and other relevant considerations. The types of information that will be included in the database for mining management to be developed under this project will include those contained in



the ASEAN mineral database. Accordingly, existing data in the ASEAN database will be used when the database for mining management is developed under this project, and the progress of the ASEAN mineral database project will be checked for appropriate coordination to avoid duplication of work on the Cambodian side.

## 2.4 Securement of project flexibility

The STEs are tasked with ensuring smooth project implementation in close cooperation with JICA Headquarters and the JICA Cambodia Office based on Cambodia's political and economic situation, the status of collaboration in other projects at GDMR and other factors. In the event of any need to change arrangements, the STEs should be flexible in adapting their activities in consultation with JICA and GDMR. For such technical cooperation projects supporting technology transfer, flexibility in activities based on GDMR performance and changes in the project environment is essential.

In line with these needs, the STEs will monitor the progress of the entire project and its achievements, and will make proposals to JICA on the direction of the initiative as appropriate.

## 2.5 Selection and procurement of appropriate equipment

Measuring instruments for mine safety (e.g., dust, noise, vibration and water quality) and equipment necessary for work implementation (e.g., printing and copying resources) will be procured based on this work agreement. The equipment should be selected in consideration of operation and maintenance at the site. As the project is expected to involve extensive printing, the printer and copier used should be separate rather than integrated. Equipment will be procured as appropriate based on compliance with JICA's Guidelines for Equipment Procurement and Management in Consignment Agreements and Other Contracts and other relevant laws and regulations while ensuring fairness, competitiveness and transparency.

The Cambodian side will supply the hardware and software required to develop a database covered by this work. The STEs will utilize the hardware and software owned by GDMR or those supplied by the Cambodian side in consideration of their compatibility with the aforementioned ASEAN mineral database.

Representatives of Sumiko Resources Exploration & Development Co., Ltd. (SRED), a member of the STEs, confirmed during the 2014 ASEAN mineral database project that key engineers could use their PCs. However, as GDMR has only an old version of GIS software with limited licenses, and because GIS software is generally expensive, it is considered appropriate to use a free GIS application (known as QGIS). As such, training on how to use QGIS software will be necessary, but SRED staff may take charge of its operation.

## 2.6 Clarification of the project implementation schedule

The work of the Project will be implemented according to the schedule outlined below.

By December 2015, the Mine Safety Law and its regulations will be drafted, methods for enforcement of the legal system will be established, and a database for mining management will be created.

By December 31, 2016, OJT on practice of inspection will be carried out two times at Cambodian open pit mine and underground mine sites.

GDMR will also implement mine safety administration based on the system and institution above, and will review and revise them according to the results of mine safety inspection at mines under advising and supporting by STEs as necessary.

Short-term training program (on mine safety law) will be provided in Japan in May 2016 or thereabouts in consideration of suitable periods for observation tours/practical training and the timing of a post-training outcome-sharing session at GDMR. The exact timing will be determined in coordination with GDMR, JICA, presenters, mines scheduled to host trainees and other related parties.

### 3. Specific Project Implementation Methods

The sections below describe the project implementation methods. Figure 3 illustrates the related implementation processes, and Form 2 outlines the work plan.

#### 3.1 Development of the Work Plan and related discussion

A basic policy on project implementation, related implementation methods and a Work Plan will be compiled into a Draft Work Plan (in English) in collaboration with JICA. Based on this plan, STEs will engage in discussions and opinion exchanges to share an overview of the project with the Cambodian side. A revised version of the plan will then be developed in consideration of the present situation and challenges in related work. Other discussions will subsequently be held with the Cambodian side before both parties compile and reach an agreement on the formal Work Plan.

##### Content to be covered by a Draft Work Plan

- Project outline (background, developments and objectives)
- Basic policy on project implementation
- Specific project implementation methods
- Project implementation system (e.g., structure of the Joint Coordination Committee (JCC))
- PDM (review of indicators and baseline establishment)
- Work flowchart
- Manpower plan
- Enhancement of convenience by the project implementation organization in Cambodia
- Other requirements

#### 3.2 Formulation of the drafts of Mine Safety Law and its regulations

STEs will present documentation from mining-related laws of Japan to WT members via seminars and lectures. These material-based seminars and lectures will focus on the provisions of the previous Mine Safety Law and its regulations, which are considered applicable in Cambodia in terms of content, structure, necessity and other relevant details.

Outlined below are the implementation processes to prepare the drafts of the Mine Safety Law and its regulations shown in Fig. 4.

##### **(1) Formulation of the Working Team**

The Working Team (“WT”) will be formed within GDMR for drafting Mine Safety Law and its regulations. First of all, the Cambodian side will select candidates for the WT. Based on the list of candidates, STEs will provide advice to ensure that the WT will include personnel from individual GDMR departments as necessary for formulation of the Law.



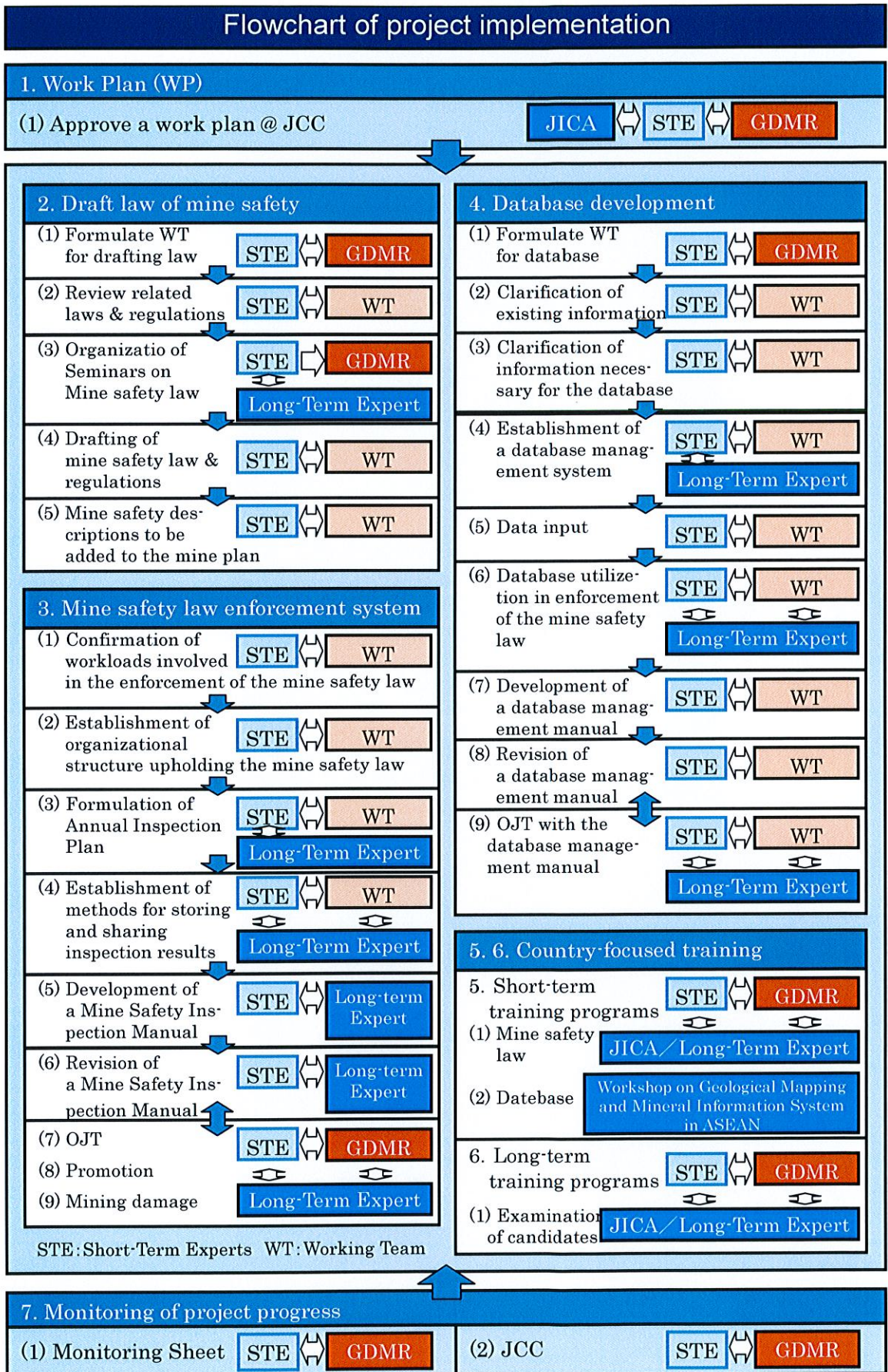


Figure 3 Flowchart of Project Implementation

7. 6. 9.



## **(2) Review of existing mining related laws and government ordinances, and examination of amendments for them**

STEs will review existing mining related laws and government ordinances of Cambodia in close collaboration with the WT to determine the scope of the Mine Safety Law and its regulations to be formulated. Any potential need to amend existing laws and government ordinances will also be considered along with other matters for the enforcement of the Mine Safety Law.

### 1. Review of existing mining related laws and government ordinances

Specifically, STEs will work closely with the WT to review the provisions of the Law on Management and Exploitation of Mineral Resources, which will need to be amended or adjusted with the Law on Environmental Protection and Natural Resource Management (within the jurisdiction of the Ministry of Environment (MOE)) in line with the drafting of the Mine Safety Law.

### 2. Examination of amendments to existing laws and government ordinances

The provisions of the Law on Management and Exploitation of Mineral Resources considered to require partial amendment would be Paragraphs 2, 3, 4 and 5 of Article 21 concerning the preservation of the environment to be detailed in a plan for mine site restoration and rehabilitation; the protection of health and safety of mine workers to be detailed in a program for mining plans and occupational health and safety in mining sites; the protection of public safety in and around mine sites; and the education, training and employment of Cambodian people to be detailed in a program for employment, education and training.

The Law on Environmental Protection and Natural Resource Management includes the Sub-Decree on Water Pollution Control, the Sub-Decree on Solid Waste Management and the Sub-Decree on Control of Air Pollution and Noise Disturbances. Accordingly, there is an apparent need for MME and MOE to work together closely on additional standards and regulations.

## **(3) Presentation seminars and lectures on mining-related laws of Japan**

### 1. Presentation seminars and lectures to the Working Team

STEs will hold seminars and lectures to the WT on the previous Mine Safety Law, the Mining Law, and the Law on Special Measures for Mine Damages Caused by the Metal Mining Industry in Japan. These are intended to promote understanding of the content, structure, background and necessity of the law on mine safety.

Mining-related laws in other countries will also be presented during seminars and lectures as part of efforts to provide information that will enable the formulation of the law appropriate for the current situation in Cambodia.

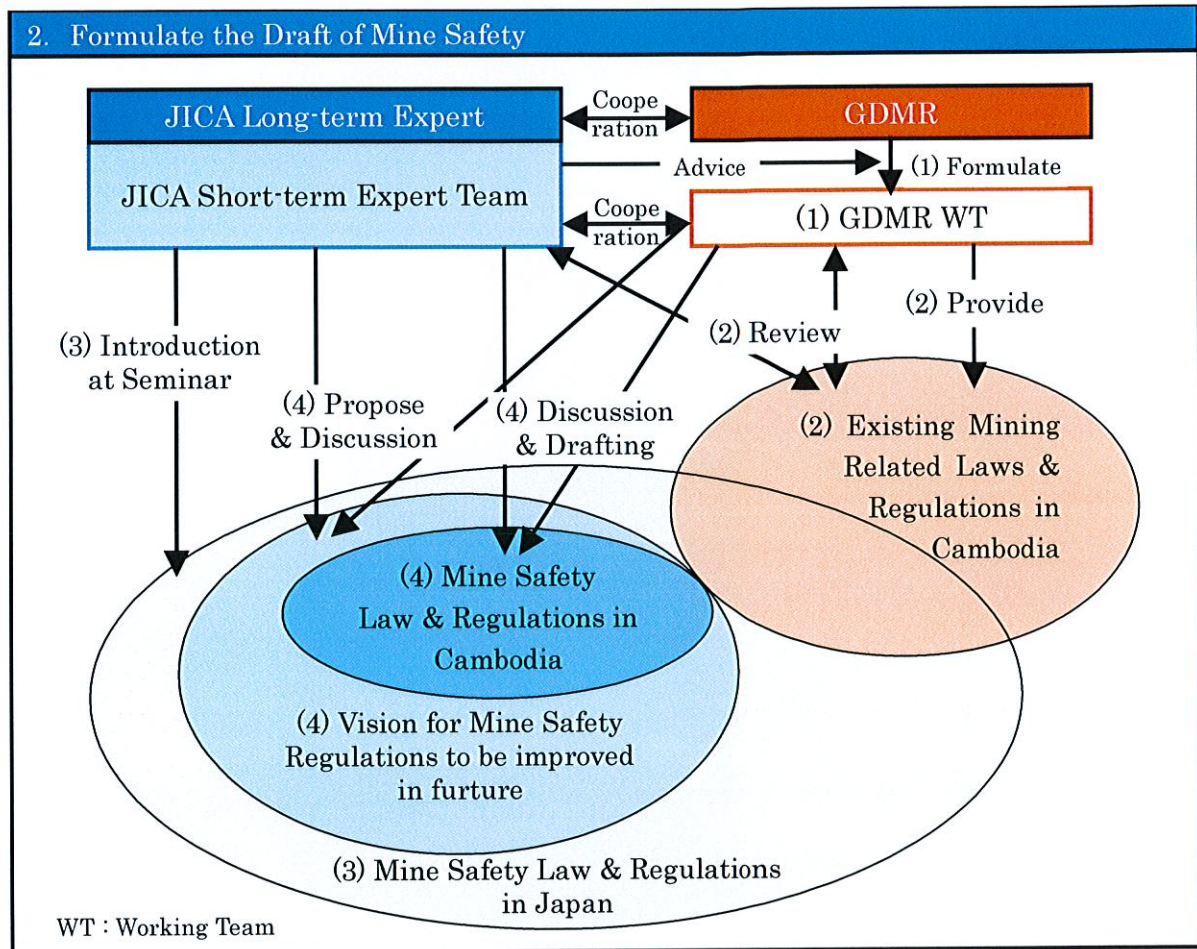


Figure 4 Flowchart of drafting "Mine Safety Law & Regulations"

## 2. Introduction of mining-related laws in other countries

In regard to mining-related laws in other countries, STEs will utilize the reports and materials related to the Study on Mining-related Legal System in Vietnam, Cambodia, Laos and Myanmar that was implemented from FY2010 to FY2012 by the Mineral and Natural Resources Division, the Agency for Natural Resources and Energy in Japan.

STEs will also be trying to introduce mining-related laws beside some ASEAN countries, when the WT or GDMR requires them.

### **(4) Formulation of drafts of the Mine Safety Law and its regulations**

STEs will work closely with the WT to draft the provisions of the Mine Safety Law and its regulations in Cambodia, their content and structure based on those of the previous Mine Safety Law and its regulations of Japan. In the drafting of the provisions of the Law, care will be taken to avoid any inconsistency with existing laws.

STEs will work closely with the WT to draft Mine Safety Regulations, which prescribe specific enforcement of the Mine Safety Law, by presenting the vision outlined below to the WT in consideration of Cambodia's present situation and the limited implementation period of this project.

- The primary stage will focus only on the minimum provisions of the regulations required to secure mine safety/security and preservation of environment. The Mine Safety Regulations will be enacted at the time with enforcement of Mine Safety Law.
- In the second stage, provisions of the regulations will be added by GDMR's consideration that the consciousness of mine safety will be clearly improved to the persons concerned domestic mines after the law goes into effect (within five years after

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enforcement).

#### **(5) Mine safety items to be added to an Exploration Work Program and a Mining Feasibility Study in the Law in Cambodia**

##### 1. Management Plan for Mining Operation

The Mining Law in Japan stipulates that prospecting rights owners intending to conduct exploration and digging rights owners intending to dig for minerals must formulate a Management Plan for Mining Operation.

The Management Plan for Mining Operation should cover not only exploration or digging but also measures to prevent mine disasters and mine pollution associated with project implementation. Before a project begins, a Management Plan for Mining Operation must be submitted to the Director of the Regional Bureau of Economy, Trade and Industry (amended to the Minister of Economy, Trade and Industry in July 2011), or approval must be received from the Director (Minister).

The Director should send the Management Plan for Mining Operation to the Mine Safety and Inspection Department for examination of its mine safety items before approval is issued.

##### 2. Application to Cambodia

Article 21 of the Law on Management and Exploitation of Mineral Resources obligates mineral license holders to formulate an exploration work program or a mining feasibility study report. The objective of this is considered similar to that of the formulation of a Management Plan for Mining Operation as stipulated in the Mining Law of Japan, but details such as the information to be included and related management are unspecified. Accordingly, it is considered appropriate to examine these considerations and add items on mine safety. To this end, STEs will work closely with the WT and provide support concerning mine safety items to be added to an exploration work program or a mining feasibility study report in the Law.

#### **(6) Holding a Presentation and a Workshop**

During formulating the drafts of the Mine Safety Law and its regulations in close collaboration work with the WT, STEs will give a brief Presentation to senior officials and concerned at GDMR on the foundations and structure of the drafts.

When the drafts of the Mine Safety Law and its regulations will be completely prepared, STEs will work closely with the WT to support the holding of a Workshop on mine safety to inform the parties relating to mining stakeholders in Cambodia and overseas investors.

### **3.3 Establishment of an enforcement system of the Mine Safety Law**

STEs will work closely with the WT to establish an enforcement system of the Mine Safety Law, as outlined below according to the establishment processes shown in Fig. 5.

#### **(1) Confirmation of workloads involved in the enforcement of the Mine Safety Law and its regulations**

After obtaining the consent of GDMR, the WT will compile information on the job descriptions, staff allocations and other considerations of the five Departments of GDMR to create a List of Current Administrative Duties in advance ((1) Confirmation of workloads involved in the enforcement of the mine safety law in Fig. 5). This is intended to clarify administrative duties of each Department.

The List of Current Administrative Duties will include primary responsibilities, the frequency of their implementation, the number of staff members and related allocation. It will be used for the proposal of an organizational structure associated with the enforcement of the Mine Safety Law and its regulations.

When the drafts of the Mine Safety Law and its regulations are complete, STEs will work closely with the WT to compile a List of Administrative Duties on Mine Safety ((1) Confirmation of workloads involved in the enforcement of mine safety law in Fig. 5) to confirm the workloads involved. The list will include specific responsibilities, the frequency of their implementation, the number of staff members and related allocation as required to enforce each provision of the Law for both GDMR and provincial DME.



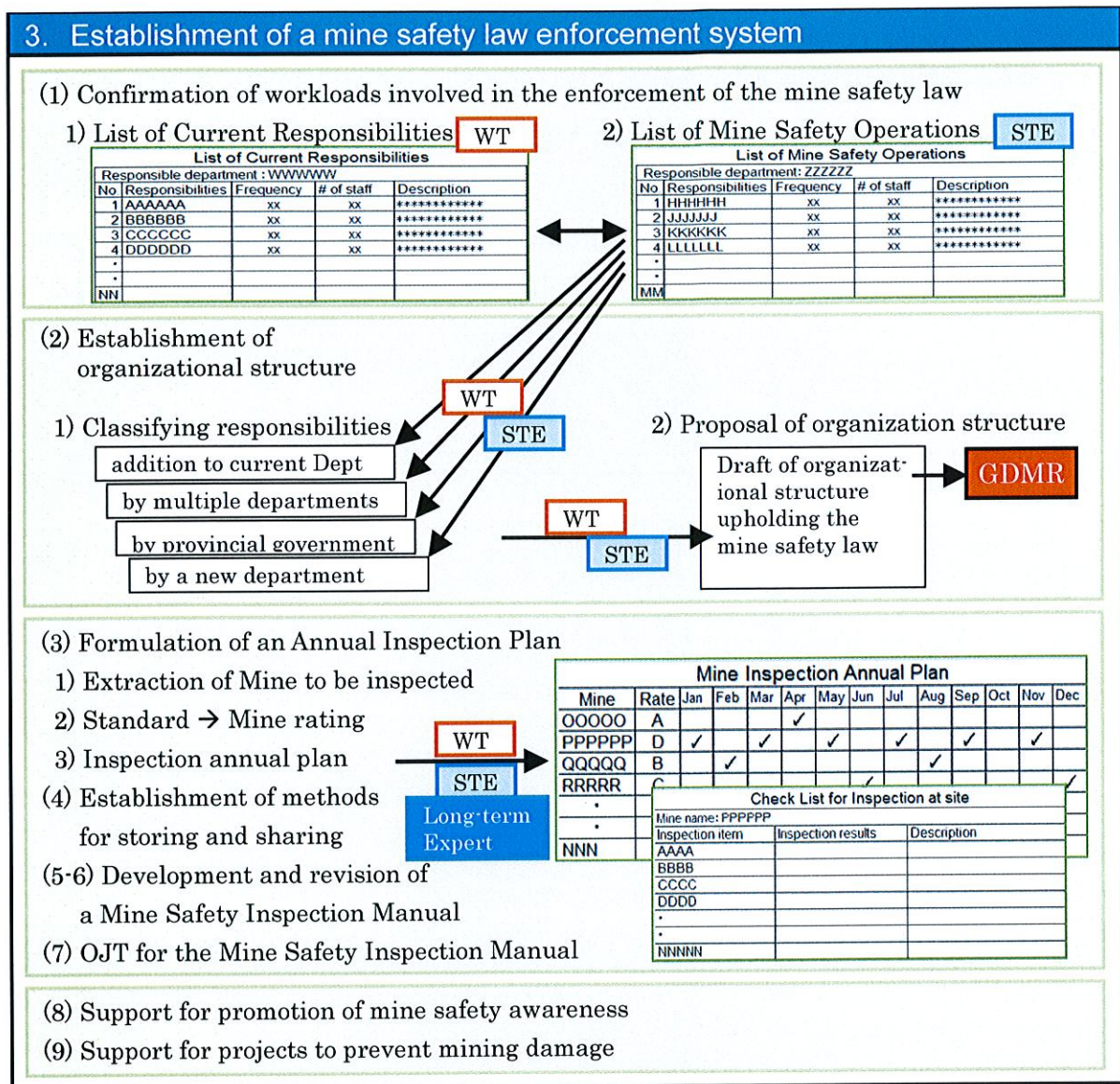


Figure 5 Flowchart of Establishment of a mine safety law enforcement system

**(2) Establishment of organizational structures for the Mine Safety Law and its regulations**

The above List of Administrative Duties on Mine Safety shows the workloads involved in enforcing the Mine Safety Law and its regulations. In this regard, STEs will work closely with the WT to classify responsibilities into the following categories as part of efforts to create effective and efficient organizational structure:

1. Administrative duties deemed appropriate for addition to the responsibilities of the current five departments of GDMR
2. Administrative duties deemed appropriate for joint performance by multiple departments
3. Administrative duties deemed appropriate for independent performance by provincial DME or collaborative performance by GDMR and provincial DME.
4. Administrative duties deemed appropriate for performance by a new department

Based on the results of this classification, STEs will clarify the responsibilities of the sections involved (e.g., division of responsibilities between central/local governments and information sharing methods). They will also make proposals to senior officials at GDMR for organizational structures at GDMR and provincial DME as deemed necessary for fulfillment of the responsibilities described in the revised Lists of Current Administrative Duties and of Administrative Duties on Mine Safety.





### **(3) Formulation of an Annual Inspection Plan**

#### **1. The annual inspection plan in Japan**

The authorities supervising mine safety in Japan annually plan supervision and inspection based on mine rating standards, which involve factors including mine scales (e.g., mineral production, numbers of mine workers, mine facilities), results of inspection, and occurrences of mine disasters and mine pollution problems based on relevant statistics. In line with the plan, mine affairs inspectors implement mine patrol inspections to prevent mine disasters and support mine pollution control.

#### **2. Application to Cambodia**

STEs will lecture on Japan's mine rating standards to the WT to support their reference in the formulation of a plan for annual inspections to be conducted by mine safety supervision and guidance officials assigned to GDMR and DME. They will also work closely with the WT to formulate an Annual Inspection Plan ((3) Formulation of an Annual Inspection Plan in Fig. 5) in light of Cambodia's implementation structure. If any issues are found with the mine rating standards based on the results of inspections conducted in the first year, STEs will work closely with the WT to review and revise the standards and prepare an annual inspection plan for the next year as appropriate.

STEs will work closely with a long-term expert providing technical guidance on mine safety administrations in its formulation of an Annual Inspection Plan and its establishment of mine rating standards, particularly in regard to items and conditions to be covered by the standards.

### **(4) Establishment of methods for storing and sharing inspection results**

STEs will formulate a format of inspection reports in close collaboration with the WT to cover all items necessary in compiling the results of inspections conducted in line with an Annual Inspection Plan. As inspection reports will significantly influence mine supervision and guidance, STEs will advise GDMR on their storage and sharing, both by GDMR and by provincial DME, with reference to the practices of supervising authorities in Japan.

### **(5) Formulation of Manuals on Mine Safety Inspection**

#### **1. Objectives of formulation of Manuals on Mine Safety Inspection**

As stipulated in the previous Mine Safety Law and its regulations, mine affairs inspectors generally have the authority to provide mine supervisors, mining engineers and mine workers with guidance on legal compliance, to enter mine facilities for inspections supporting the provision of supervision and guidance toward mine safety/security and environmental preservation, and to order the suspension of mine facility operation in case of imminent danger caused by any violation of the Mine Safety Law.

Due to the functional and physical difficulty of mine safety administration based on GDMR's centralized supervision and guidance alone, mine affairs inspectors and safety supervision/guidance officials should also be assigned to relevant provincial DME and work closely with their counterparts at the central government to conduct on-the-spot inspections. Accordingly, it will be necessary to formulate Manuals on Mine Safety in consideration of inspection method consistency and other matters.

#### **2. Content of the Manuals**

The Manuals will handle all matters involved within the scope of responsibility for mine affairs inspectors and mine safety supervision/guidance officials, and will cover the necessary preparations for mine inspection. It will also include questions to be posed to mine supervisors and mining engineers, items to be examined in mine facility inspections, checkpoints to cover during inspections, and measurements to be taken in case of imminent danger relating to mine facilities.

#### **3. Formulation of the Manuals on Mine Safety Inspection**

STEs will lecture on the content and structures of the Manuals on Mine Safety Inspection to the WT with reference to the guidelines for supervision/inspection and other resources used in Japan. In close collaboration with the WT, they will also formulate the Manuals on Mine Safety Inspection appropriate for the current situation in Cambodia. In the manual's formulation, STEs will



engage in extensive consultation regarding mine safety inspection with a long-term expert providing technical guidance on mine safety administrations.

#### 4. Holding a presentation

During formulating the Manuals on Mine Safety Inspection in close collaboration work with the WT, STEs will give a brief presentation to the senior officials at GDMR on the contents of the Manuals.

### **(6) Revision of the Manuals on Mine Safety Inspection**

STEs will engage in extensive consultation with a long-term expert regarding the Manuals on Mine Safety Inspection based on inspection results, and will review and revise the content of the Manuals in close collaboration with the WT as necessary.

STEs will also identify issues with the Manuals in their use during OJT and reflect the results in reviews and revisions of their content.

### **(7) OJT on mine safety inspection based on the Manuals and other considerations**

#### 1. OJT on mine safety inspection based on the Manuals

Due to the limited implementation period and budgetary resources of the project, it is considered impractical to provide training to all mine affairs inspectors and mine safety supervision/guidance officials assigned to GDMR and provincial DME. Accordingly, STEs will provide OJT on mine safety inspection based on the Manuals to GDMR staff and several provincial DME that will be executed 2 times at mine sites (an open-pit mine and an underground mine, if possible).

#### 2. OJT on the Mine Safety Management System

As risk management is effective in eliminating workplace accidents and disasters, and because mine safety supervising authorities in Japan recommend the establishment of a Mine Safety Management System,

STEs will provide OJT on the Mine Safety Management System to the WT, GDMR staff and several provincial DME staff to clarify risk assessment procedures and implementation methods that will be executed 2 times at the mine sites above-mentioned.

#### 3. Collaboration with a long-term expert

STEs will engage in consultation with a long-term expert providing technical guidance on mine safety administration regarding the planning, implementation and assessment of OJT on the Mine Safety Management System for mine affairs inspectors and mine safety supervision/guidance officials, and will work together with him to ensure effective training.

#### 4. Holding a presentation

STEs will give a brief presentation to the senior officials at GDMR on results of OJTs.

#### 5. Suggestions for the establishment of a Training System and a Training Organization for Mine Safety

The top priority in the sustainable development of the mining industry is the fostering of human resources to promote mine safety. Due to the functional and physical difficulty of securing mine safety/security and preserving the environment based on the centralized supervision and guidance at GDMR alone, mine affairs inspectors and mine safety supervision/guidance officials should also be assigned to provincial DME and work closely with their central government counterparts. Accordingly, STEs will recommend that GDMR acts swiftly to examine the possibility of establishing a Training System adopting OJT on mine safety inspection and the mine safety management system, and a Training Organization for mine safety to foster the development of mine affairs inspectors and mine safety supervision/guidance officials both GDMR and provincial DMR.

### **(8) Promotion of campaigns for mine safety**

The mining industry has a high incidence of accidents compared with other industries due to its poor work environments in general. It is therefore essential to enhance the emphasis on mine safety among mine supervisors, mining engineers and mine workers to ensure safety/security and preserve the environment. To conclude, campaigns for mine safety need to be promoted nationwide.

As GDMR will play a central role in such efforts, STEs will work closely with the WT and provide support concerning promotion of campaigns for mine safety with focus on the specific approaches outlined below.



### 1. Holding a workshop on mine safety

JICA and GDMR will hold a workshop on mine safety to inform the parties relating to mining stakeholders in Cambodia and overseas investors when the technology transfer of the project will be completely carried out.

The WT will play a central role in preparing presentation materials for the workshop under advice and support by STEs, which will also help to assess levels of understanding.

### 2. Introduction of efficient methods to promote Mine Safety Law and its regulations

To promote awareness regarding the content and structure of Mine Safety Law and its regulations among mine supervisors, mining engineers, mine workers and other parties relating to mining, it is essential to enhance levels of understanding by providing easy-to-understand explanations during mine safety inspections and on other occasions. Accordingly, STEs will lecture to the WT about guidebook publication, which is seen as an effective approach for this purpose. Regarding guidebook content, STEs will engage in extensive consultation with a long-term expert providing technical guidance on mine safety administration.

### 3. Other enlightening campaigns

The National Mine Safety Week is a regular enlightening campaign to promote mine safety in Japan. STEs will lecture to the WT on such events and provide support for specific initiatives in this field.

## **(9) Support for the Project of Mine Pollution Control**

### 1. The project of mine pollution control in Japan

In Japan, mining-related issues have led to social problems such as environmental pollution caused by the discharge of contaminated wastewater with heavy metals from drifts, waste stone dams and tailings dams. Fatal or injurious accidents have also occurred in operating mines and in abandoned mines because mining rights owners have gone bankrupt or dismissed organizations. Consequently, the Law on Special Measures for Mine Damage Caused by the Metal Mining Industry was established in 1973 to control mine pollution caused by the metal mining industry, contribute to the protection of people's health and preserve the environment. The Law obligates digging rights owners to submit a mine pollution control project plan, deposit reserve funding based on the reserve system for implementing the project after the mine is closed.

### 2. Application to Cambodia

In Cambodia, the Law on Management and Exploitation of Mineral Resources stipulates the submission of a Restoration Plan for when mine sites are closed as part of industrial mining license applications, and also requires the deposit of restoration funds based on the Plan. However, as the details of such funding may be unclear, the state of operation will be examined. For problems found with the measures of mine pollution control relating to mine closure, the details and structure of a Mine Pollution Control System (as adopted in Japan) may be stipulated in the Mine Safety Law and its regulations to control mine pollution in Cambodia.

If such stipulation is deemed necessary for the Mine Safety Law, STEs will give material-based lectures to the WT on the reserve system for mine pollution control with reference to formulas for reserve fund computation. The lectures will be held as part of mining-related laws of Japan described in 3.2 (3) above.

## **3.4 Database development**

### **(1) Establishment of a Working Team**

STEs will establish a Working Team ("WT") tasked with building a database for mining management in close collaboration with the JICA Study Team. As the database will primarily contain cadastral information and data on mines and mineral resources, WT members should be selected from departments that handle and manage such information. Accordingly, STEs will identify appropriate members based on consultation with the Cambodian side.

### **(2) Clarification of existing information**

STEs will check existing information held by GDMR and related storage methods (e.g., analog or digital), storage media (e.g., database, hard disk, CDs, prints) and collection methods.

### **(3) Clarification of information necessary for the database**

STEs will work closely with the WT to define items of cadastral information and data on mines and mineral resources for storage on the database. Such items will include information necessary for mine safety operations and for GDMR responsibilities such as mineral resource management and mining law enforcement.

### **(4) Establishment of a database management system**

STEs will examine the question of who will manage the database of cadastral information and data on mines and mineral resources, and will also consider where and how such management should be performed. Based on its findings, STEs will propose a management system to GDMR. This work will be performed in conjunction with the WT.

- Management: Which department will manage the database? Who will be the chief supervisor? Who will be the database managers and administrators in charge of cadastral information and data relating to mines and mineral resources?
- Update: Who will update the database, and when and how will this be done?
- Publication: Which parts of the database will be published and how will they be made viewable? Who will manage and approve such work?

STEs will propose the centralized management of the database, which is expected to consist of three parts (i.e., cadastral information, information relating to mines, and information relating to mineral resources) because database users often look for different kinds of data beyond such boundaries. As database development will involve multiple departments, STEs will propose, as a minimum, the installation of an intranet and a server as well as the use of a free GIS application (QGIS), Microsoft Excel and other programs.

### **(5) Seminar**

Before the following data input works, "STE" hold a seminar to teach WT members how to use the QGIS software and how to create the database in the beginning of the second field investigation

### **(6) Data input as OJT**

After the work outlined above has been conducted, the information agreed on by the WT and the supervisor at GDMR will be put on the database. Data entry will involve a system designed for efficiency with the possible utilization of GDMR staff. As a general rule, data input is daily work during stay of "STE" DB team and will be conducted as OJT under the management of "STE"

### **(7) Database utilization in enforcement of the mine safety law**

In relation to the mine safety law's enforcement, STEs will provide technical guidance on the utilization of database information.

### **(8) Development of a database management manual**

STEs will examine approaches to building and managing the database and other relevant matters, and will compile the information into a database management manual in conjunction with the WT.

### **(9) Database management manual revision**

The database management manual will be used in actual operations and revised for improvement based on issues and concerns identified.

### **(10) OJT with the database management manual**

STEs will support ongoing maintenance of the database, data updates and data utilization by providing OJT to GDMR staff for database operations using the database management manual.

## **3.5 Examination of country-focused training**

Under this project, two short-term training programs in Japan – one on mine safety law and the other on database management – are planned. The training program on mine safety law will be covered by this work agreement, whereas the training program on database



management will be held as a separate issue-specific JICA training initiative titled Project on Capacity Development for ASEAN Mineral Database Operation. The sections below outline the related implementation plans.

STEs will advise GDMR on working-level officials in its departments for whom the training described below is deemed suitable, and will provide related support. STEs will hold a meeting after trainees return from Japan to allow the sharing of training results within GDMR.

Table 1 Short-term training in Japan for Mine Safety Law – Example

Day	Activity	Stay	Description
1~2	Trip from Cambodia to Japan, Briefing for training in Japan	Air; Tokyo	
3	Workshop -- Guidance and Supervision for Mine Safety in Japan	Tokyo	
3	Workshop -- Risk Assessments in Mining	Tokyo	
4	Workshop -- Example of Mine Safety activity in Japan	Tokyo	
5	Trip from Tokyo to Hokkaido	Hokkaido	
6	Visit to a underground coal mine, Workshop at Mine Siete	Hokkaido	
7	Trip from Hokkaido to Tokyo	Tokyo	
8	Trip from Tokyo to Tochigi	Tochigi	
9	Visit to a open pit limestone mine, Workshop at site, Trip to Tokyo	Tokyo	
10	Workshop -- Mine pollution and countermeasure in Japan	Tokyo	
11	Workshop -- Mine Safety Situation in SE Asia, Preparation for reporting	Tokyo	
12	Visit to JOGMEC, Mining Company	Tokyo	
13	Report conference, Discussion	Tokyo	
14	Trip from Tokyo to Cambodia		

### **(1) Training Program on Mine Safety Law**

The training program on mine safety law will be planned and implemented for six trainees over a period of approximately two weeks as part of this work. Table 1 shows a draft of the schedule. WT members will be invited to Japan to promote their understanding of essential provisions in mine safety law and mine safety administration approaches, including on-site training.

For short-term trainees from Cambodia, the program will include presentations on mine safety supervision/guidance and risk assessment in Japan as well as presentations at operating mines on measures to prevent hazards and control mine pollution. Related mine facilities tours will also be conducted. The program will be planned and implemented in line with JICA's Guidelines on Training Program Implementation under Consultant Contracts and Other Agreements, particularly "3. Training Procedures and Responsibilities of Order Recipients (e.g., Consultants)" in the guidelines. STEs plan to invite presenters from safety-related departments at METI, JOGMEC, the Mining Safety and Health Association (now the Japan Industrial Safety and Health Association), Nittetsu Mining Co., Ltd., Kushiro Coal Mine Co., Ltd. and other organizations.

### **(2) Database training**

JICA collected and verified information on the state of mineral resource information management in the ASEAN region in 2014. Building on this project, the agency will hold issue-specific training titled Project on Capacity Development for ASEAN Mineral Database Operation in Japan from 2015. Several engineers at relevant organizations in ASEAN countries will be invited to the training.

Engineers selected from GDMR will participate in the program to help develop basic knowledge and abilities in database operation, and will also strengthen their cooperative relations in association with the ASEAN mineral database.

## **3.6 Examination of long-term trainee candidates**

In the project plan, two long-term trainees will be hosted annually in each of three years (i.e., six trainees in total). However, the provision of long-term training is outside the scope of this work.

Although long-term trainees will be selected by the counterpart (CP), STEs will compile a list of candidates (with positions, career histories, expected research themes and other backgrounds) and consult with JICA on appropriate trainee selection to support its provision of advice

on research themes to potential long-term trainees and its recommendation of suitable candidates to senior CP officials.

### 3.7 Monitoring of project progress

#### (1) Monitoring using monitoring sheets

STEs will work with the project implementation organization to create monitoring sheets designated by JICA and check the progress of the project. They will formulate Monitoring Sheet Ver. 1 after checking any changes in the PDM (Attachment 1) and the PO (Attachment 2) that were agreed upon by the project implementation organization and JICA when the RD was signed at the start of the project. They will then monitor progress using the monitoring sheet every six months.

#### (2) Holding of JCC meetings

JCC, chaired by the Deputy Minister of Mines and Energy, will be convened at least once a year to share information on project progress, challenges and schedules among related parties. The results of the meetings will be reported to JICA.

### 3.8 Monthly Report

For work performed during the work period at home and abroad, STEs will compile a Monthly Report containing the information described below and submit it to JICA as an attachment to the Consultant Service Monthly Report (Geppo) stipulated in Article 7 of the Common Specifications for Commissioned Work (*Kyotsu Shiyosho*). Any written agreements with the Cambodian side will also be attached for submission to JICA as appropriate.

- The month's progress, the next month's plan, and immediate tasks
- Photos of project activities
- Work flowchart

### 3.9 Project Progress Report and Project Completion Report

STEs will detail their activities up to December 31, 2015, in a Project Progress Report and report them at a JCC meeting. They will also detail project activities in a Project Completion Report and report them at a JCC meeting. Items to be covered by the Project Progress Report and the Project Completion Report:

- Project outline (background, developments and objectives)
- Activities (described according to the work flowchart)
- Challenges facing project implementation, workarounds and lessons learned (e.g., work implementation methods, operation structures)
- Degree of achievement of the project purpose
- Proposals toward achievement of the overall goal
- Activity plan for the next period (progress report only)
- Attachments (in English or Japanese when attached to Japanese documents)
  - ◇ PDM (latest version with history of changes)
  - ◇ Work flowchart
  - ◇ Information on dispatch of experts (manpower plan; latest version)
  - ◇ Information on the provision of equipment and equipment accompanied by experts (including a delivery list)
  - ◇ JCC minutes of meetings and similar
  - ◇ Other activity results

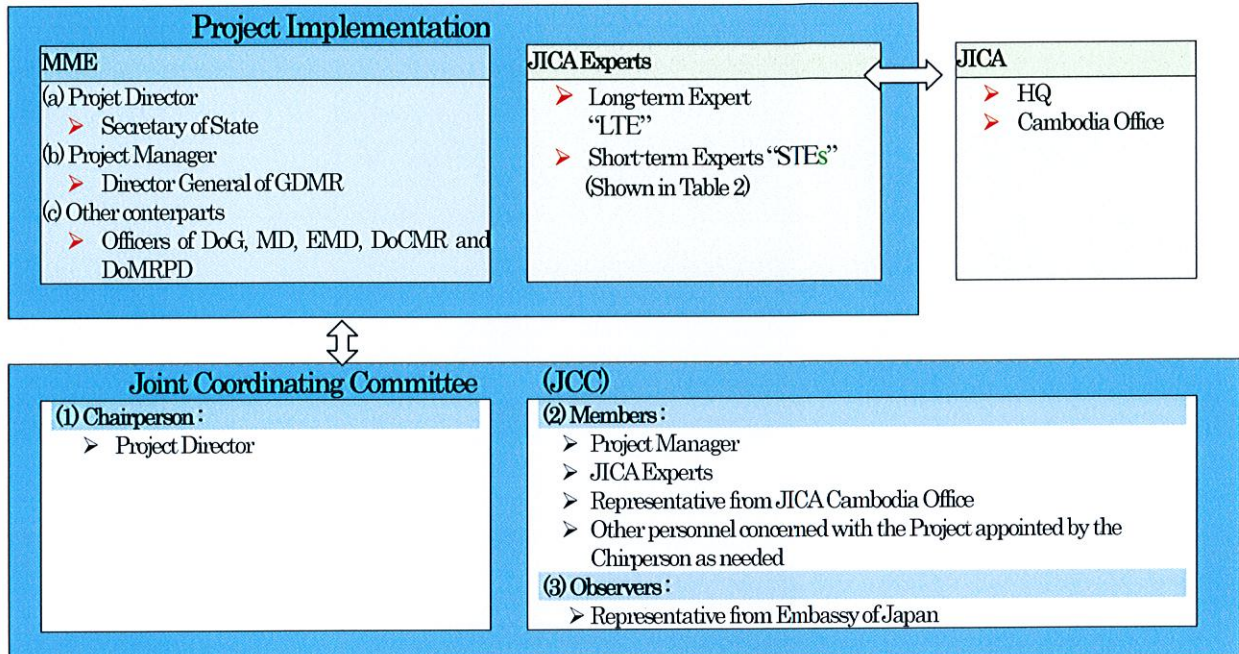
Note: The degree of achievement of the project purpose, proposals toward the achievement of the overall goal and the delivery list



will be covered only by the Project Completion Report.

#### 4. Project Implementation System (e.g., the structure of JCC)

This project will be implemented under the system outlined below through collaboration between MME/GDMR and JICA/experts.



DoG: Department of Geology    MD: Mining Department    EMD: Exploration Management Department  
 DoCMR: Department of Construction Material Resources  
 DoMRPD: Department of Mineral Resources Promotion and Development

Figure 6 Project Organization

Table 2 JICA Short-Term Experts (STEs)

Family Name	Given Name	Sex	Role
Kashima	Sakae	M	General Manager / Mine Safety System
Sueoka	Shinya	M	Vice-General Manager / Mine Safety System
Aoki	Atsushi	M	Mine Safety Law
Onuma	Takumi	M	Database Manager
Ninomiya	Atsushi	M	Database of Geology & Mineral Resources
Suzuki	Ioki	M	Database of Tenement, Mine & Mine Safety

*[Handwritten marks]*

## 5. Work Flowchart

### **(1) Work Process Plan**

The work will cover approximately 25 months starting in early December 2014 (Table 4).

The work will be performed accordingly in two phases outlined below.

In the first phase (from the start to December 2015), STEs will carry out primary work (e.g., drafting of the Mine Safety Law and its regulations, enforcement of the legal system of mine safety, creation of a database for mining management, and development of some manuals).

In the second (final) phase (from January to December 31, 2016), STEs will implement the work (e.g., carrying out OJT on practice of inspection twice at a mine site, revisions of manuals, examination of country-focused training (short-term), examination of long-term training feasibility, monitoring of project progress and formulation of the Project Completion Report). STEs will also monitor relevant operations by the Cambodian CP based on manuals and implement improvements (revisions of systems/institutions/manuals and database maintenance/updates) as appropriate.

The short-term training in Japan on mine safety law is scheduled to be held around May 2016 in consideration of the periods available for trainee observation tours/practical training and the timing of a post-training outcome-sharing meeting at GDMR. However, the exact period will be determined in coordination with GDMR and JICA, presenters, mines set to host trainees, and other relevant parties.

### **(2) First-phase work plan**

In the first phase (from the start to December 2015), STEs will follow a general plan to implement the work in Japan on one occasion and conduct five times of the work in Cambodia. Some work in Japan is also expected before and after each work in Cambodia.

#### 1. Development of the project implementation plan, the draft work plan and other documentation

From mid-December 2014 to early January 2015, STEs will work in conjunction with JICA to develop the project implementation plan, the draft work plan and other documentation. During this period, STEs will coordinate the schedule of the first work with the Cambodian side.

#### 2. First work in Cambodia

A work will be conducted over a period of approximately 2 weeks in January 2015. During this period, STEs will give a project overview through discussions and opinion exchanges with Cambodian stakeholders based on the draft Work Plan, and will compile a formal Work Plan to be agreed on at the JCC meeting.

STEs will establish GDMR Working Teams (WTs), begin collecting information on mining-related laws in Cambodia and start preparations for database hardware and software.

#### 3. Second work in Cambodia

A work will be conducted over a period of approximately 5 weeks from March to April 2015. During this time, STEs will visit Cambodia in turns. The WTs of mine safety law and of the database will start their respective activities like an advance work to formulate the Mine Safety Law and to develop a database.

#### 4. Third work in Cambodia

A work will be conducted over a period of approximately 6 weeks from May to June 2015. During this time, the WTs of mine safety law and of the database will advance work to formulate the Mine Safety Regulations and to develop a database.

#### 5. Fourth work in Cambodia

A work will be conducted over a period of approximately 8 weeks from August to October 2015. During this time, the WTs of mine safety law and of the database will advance work to establish the organizational structures for the mine safety law and to develop a database.



#### 6. Fifth work in Cambodia

A work will be conducted over a period of approximately 8 weeks from October to December 2015. During this time, the WTs of mine safety law and of the database will advance work to formulate an annual inspection plan and manuals on mine safety inspection, and to develop a database.

STEs will also examine and prepare for country-focused training (short-term) and long-term training. STEs will check the progress of the work using a monitoring sheet, formulate the Project Progress Report and report to JCC.

### **(3) Second (final)-phase work plan**

In the second (final) phase (from January to December 31, 2016), STEs will follow a general plan to implement work in Japan on one occasion (country-focused training) and four times of the work in Cambodia. Some work in Japan is also expected before and after each work in Cambodia.

#### 1. Implementation of country-focused training

STEs will arrange, implement and report on training as outlined below based on the Guidelines on Training Program Implementation under Consultant Contracts and Other Agreements.

- (1) Decision on trainee candidates (by approx. 3 months before the start of training)
- (2) Collection of Application Forms (by approx. 2 months before the start of training)
- (3) Drafting of a detailed training plan (by approx. 2.5 months before the start of training)
- (4) Decision on the training institution (by approx. 2 months before the start of training)
- (5) Procedures for trainee hosting (by approx. 2 months to 1 month before the start of training)
- (6) Training preparations (by approx. 1.5 months before the start of training)
- (7) Arrival of trainees in Japan
- (8) Training
- (9) Post- training outcome-sharing session
- (10) Trainee departure from Japan to home countries
- (11) Reporting on project completion

#### 2. Sixth work in Cambodia

A work will be conducted over a period of approximately 4 weeks from February to March 2016. During this time, the WT of mine safety law will advance work to implement indoor exercises of OJT on practice of inspection using the manuals of mine safety.

#### 3. Seventh work in Cambodia

A work will be conducted over a period of approximately 4 weeks from June to July 2016. During this time, the WTs of mine safety law and of the database will advance work to carry out OJT on practice of inspection using the manuals of mine safety at a mine site and to revise database management manual. STEs will hold an outcome-sharing session after short-term training program attendees return home, and will have the CP check the status of relevant operations, revise manuals and engage in other work.

#### 4. Eighth work in Cambodia

A work will be conducted over a period of approximately 4 weeks from September to November 2016. During this time, the WTs of mine safety law and of the database will advance work to carry out OJT on practice of inspection using the manuals of mine safety at a mine site, hold a Workshop on mine safety and to revise database management manual. JV will have the CP check the status of relevant operations, revise manuals and engage in other work.



#### 5. Ninth work in Cambodia

A work will be conducted over a period of approximately 2 weeks in December 2016. JV will have the CP check the status of relevant operations, revise manuals and engage in other work, and will also check the progress of work at the end of the period using a monitoring sheet, formulate a Project Completion Report and report to JCC.

### 6. Manpower Plan

JV will assign a supervisor, a deputy supervisor and four experts for this work. Three experts will work on the mine safety law and its system, and the other three experts will work on the creation of a database of geological information and mineral resource information. Thus, the following six members will be engaged in the work (Table 4).

### 7. Provision of services by the project implementation organization in Cambodia

GDMR in MME (the project implementation organization in Cambodia) will provide the following services for project implementation:

- Assignment of counterparts
- Provision of office space

## 8. Equipment Required for Work in Cambodia

Monitoring equipment for mine safety operations and equipment necessary for work implementation will be procured via the performance of this work. A printer and a copier will be selected and procured in Cambodia in consideration of related operation and maintenance at the site (Table 3).

Table 3 List of equipment to be procured

Equipment name	Manufacturer	Details	English language		Quantity
			Equipment body	Instruction manual	
<b>Monitoring equipment required for mine safety operations</b>					
<b>Water quality monitoring instrument</b>	Oyo Corporation	Multi Water Quality Meter Model 4676	○*1	○*2	1
		pH buffer solution, others			5 sets
	Techno International Trading Co., Ltd.	Bailers (water samplers) made of high-density polyethylene (set of 24)			10 sets
	Techno International Trading Co., Ltd.	Pump (Mini-Monsoon) + Controller			1 set
<b>Sound-level monitoring instrument</b>	Rion Co., Ltd.	Sound-level Monitoring Instrument NL-42EX with verification and functional expansion program (NX-42EX)	○*1	○	1
		Sound-level Monitoring Instrument Tripod (ST-80)			1
<b>Vibration-level meter</b>	Rion Co., Ltd.	Vibration-level Meter VM-53 with verification	○	○	1
<b>Dust meter</b>	Sibata Scientific Technology Ltd.	Digital Dust Monitor LD-3K2	○*1	○*3	1
	Japan Association of Surveyors	Dust meter calibration			1 set
<b>Weather observation instruments</b>	Vaisala KK	Weather Transmitter WXT520 10-meter cable with bird kit	○	○	1
		Logger TAMAPOD S-XT			1
		Solar System 10 W, 12 V, 12 Ah			1
		Logger and battery box			1 box
		Observation pole 3 m			1
<b>Inspection-site recording instruments</b>		GPS device and digital camera	○	○	2 sets
<b>Equipment required for work implementation</b>					
<b>Printer</b>	Canon Inc.	(A4 color, ink) MAXIFY MB5330 or equivalent to be purchased at the site			1
		Ink cartridges			5 sets
<b>Copier</b>	Canon Inc.	(A3 monochrome, laser) Satera LBP8710e or equivalent to be purchased at the site			1
		Toner cartridges			5 sets
<b>Whiteboards</b>		Board and marker			2 sets

\*1: Although descriptions are partially in Japanese, this is not expected to adversely affect instrument usage.

\*2: According to the manufacturer, the English manual of an old model can be used.

\*3: An English manual is available for LD-3B. In Japan, LD-3K2 is used for work environments and LD-3B for building management. However, as the standards are not applied outside Japan, the manufacturer supplies the LD-3B English manual for use with LD-3K2.





MINUTES OF MEETING  
BETWEEN  
PROJECT DIRECTOR  
AND  
GENERAL MANAGER OF THE PROJECT  
ON  
THE ISSUES AND EXTENSION OF CAPACITY DEVELOPMENT FOR MINING  
ADMINISTRATION PROJECT

Japan International Cooperation Agency (hereinafter referred to as "JICA") is assisting the General Department of Mineral Resources in Ministry of Mines and Energy (hereinafter referred to as "GDMR/MME") to draft legal systems of mining safety in the Project on Capacity Development for Mining Administration (hereinafter referred to as the "Project").

For complete the purpose of the Project within a time frame, it run short of time in current schedule, GDMR/MME required increase in lecture time and also visiting time of JICA Expert Team to Phnom Penh.

As a result of the discussions, both parties have agreed the issues and solutions referred to the document attached hereto.

Phnom Penh, September 3, 2015



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HE. Tina DITH  
Project Director  
Ministry of Mines and Energy  
Kingdom of Cambodia



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Mr. Sakae KASHIMA  
General Manager of the Project  
JICA Short-term Experts  
Japan

## Record of the meeting

A meeting to discuss about the issues and propose extension of the Capacity Development for Mining Administration Project between Project Director and General Manager of the Project was held on 3<sup>rd</sup> September 2015 at Ministry of Mines and Energy. So far, the consultants have conducted 3 times of trainings on safety law and regulations to GDMR staffs. Those trainings have been carried out smoothly but there some issues that the project is facing:

1. The translated documents using technical term for mining in Khmer and English language are not understandable and addition to the GDMR staffs do not have much experience in underground mining, that causes the process of discussion and explanation takes more time than expected.
2. The planned safety regulations are not sufficient; it needs to have more supporting regulations, implementation formats and field practices to make the safety law and regulations applicable for Cambodia and also to enhance the capacity of the GDMR staffs.
3. Beside the verbal explanation, it also needs drawings and video to illustrate and show to GDMR staffs the safety of underground mining.

Based on the above mentioned issues and to finish the safety law and regulations successfully, the meeting has agreed with following solutions:

- Propose to JICA Head Office about increase of dispatch times of JICA short-term experts to GDMR/MME to implement the Project successfully

Both parties have agreed with the issues and proposed solutions.

Phnom Penh, September 3, 2015

Attendance; HE. Tina DITH; Project Director

Mr. Teang Sokhom; Mine Safety Working Team Leader

Mr. Sieng Sotham; Data Base working Team Leader

Mr. Sakae Kashima; General Manager of the Project, JICA Short Term Expert

Mr. Atsushi Aoki; Mine Safety Team member, JICA Short Term Expert

Mr. Akira Shichinohe; Project Member, JICA Long Term Expert

Mr. Kry Mengang; Interpreter of the Project



Detailed Implementation Plan of the Project

Work Plan			Requested Schedule					
	Dispatch term		Objectives		Dispatch term		Objectives	
1st	01/11/15	01/24/15	<ul style="list-style-type: none"> <li>Discussion and agreement on the Work Plan</li> <li>Decision on Working Team (WT) members</li> <li>Approval of the Work Plan at the first Joint Coordinating Committee (JCC) meeting</li> </ul>				Same as on the left	Finished
2nd	03/22/15	04/11/15	<ul style="list-style-type: none"> <li>Review of Law on Management and Exploitation of Mineral Resources and related Existing sub-decrees and ministerial orders</li> <li>Lectures on drafting Mine Safety Law and comparison of mining related laws with other countries</li> <li>The mine inspection</li> </ul>				Same as on the left	Finished
3rd	05/31/15	06/27/15	<ul style="list-style-type: none"> <li>Drafting Mine Safety Regulations</li> </ul>	06/07/15	07/03/15		<ul style="list-style-type: none"> <li>Lectures on drafting Mine Safety Regulation (phase 1) From Article 1 to 110</li> </ul>	Finished
4th	08/09/15	09/05/15	<ul style="list-style-type: none"> <li>Delivery of lectures on administrative duties arising from enforcement of Mine Safety Law and its regulations</li> <li>Classification of administrative duties on mine safety using the List of Administrative duties on Mine Safety, and preparing the proposals of Organization Structure</li> </ul>	08/16/15	09/11/15		<ul style="list-style-type: none"> <li>Lectures on drafting Mine Safety Regulation (phase 1) From Article 111 to 229</li> </ul>	Change Objectives
5th	11/29/15	12/26/15	<ul style="list-style-type: none"> <li>Delivery of lectures on Manuals of Mine Safety Inspection</li> <li>Delivery of lectures on mine rating standards for the formulation of an Annual Inspection Plan</li> <li>Joint Coordinating Committee (JCC) meeting</li> </ul>	11/29/15	12/26/15		<ul style="list-style-type: none"> <li>Lectures on drafting Mine Safety Regulation (phase 1) From Article 230 to 282 + phase 2</li> <li>Holding a Workshop on mine safety</li> <li>Joint Coordinating Committee (JCC) meeting</li> </ul>	Change Objectives
				01/24/16	02/20/16		<ul style="list-style-type: none"> <li>Lectures on "the Regulation on procedures and items of mentioned provided in Mine Safety Law (temporary name)"</li> </ul>	Additional Schedule
6th	02/28/16	03/26/16	<ul style="list-style-type: none"> <li>Delivery of lectures on Mine Safety Management System and implementation of indoor exercises</li> <li>Delivery of lectures on mine safety inspection using monitoring instruments, and implementation of indoor exercises</li> <li>Delivery of lectures on implementation plans for OJT using manuals of mine safety inspection, OJT using monitoring instruments and OJT based on technical skills of a risk assessment</li> </ul>	03/13/16	04/09/16		<ul style="list-style-type: none"> <li>Lectures on "the Regulation on procedures and items of mentioned provided in Mine Safety Law"</li> <li>Implementation of indoor exercises on monitoring instruments using mine safety inspections</li> </ul>	Change Objectives
7th	06/26/16	07/24/16	<ul style="list-style-type: none"> <li>Implementation of OJT using the manuals at a mine site, OJT using monitoring instruments and OJT based on technical skills of a risk assessment</li> <li>Evaluation of OJT results and summarization of problems</li> <li>Delivery of presentations on enlightening campaigns for mine safety</li> </ul>	05/22/16	06/18/16		<ul style="list-style-type: none"> <li>Lecture on "the Regulation on procedures and items of mentioned provided in Mine Safety Law"</li> <li>Delivery of lectures on administrative duties arising from enforcement of Mine Safety Law and its regulations</li> <li>The proposals on an administrative reforms in GDMR</li> </ul>	Change Objectives
				07/17/16	08/13/16		<ul style="list-style-type: none"> <li>Lectures on Mine Safety Inspection Manuals</li> <li>Lectures on mine rating standards for the formulation of "the Annual Inspection Plan"</li> </ul>	Additional Schedule
8th	09/07/16	09/28/16	<ul style="list-style-type: none"> <li>Formulation of implementation plans for OJT using manuals of mine safety inspection, OJT using monitoring instruments and OJT based on technical skills of a risk assessment</li> <li>Implementation of OJT at a mine site using the manuals, OJT using monitoring instruments and OJT based on technical skills of a risk assessment</li> <li>Evaluation of OJT results and summarization of problems</li> <li>Revision of manuals of mine safety inspection, review of the mine rating standards and formulation of an Annual Inspection Plan for the next year</li> <li>Delivery of lectures on methods of inspection-report storage and sharing, suggestions of a Training System and a Training Organization to develop human resources of mine safety</li> </ul>	09/11/16	10/08/16		<ul style="list-style-type: none"> <li>Lectures and implementation of indoor exercises in regard to Risk Management System</li> <li>Lectures on implementation plan on OJT using manuals of mine safety inspection, using monitoring instruments and using technical skills of risk assessment method</li> <li>Implementation of OJT using the manuals of mine safety inspection, using monitoring instruments and using technical skills of risk assessment method at a mine site</li> <li>Evaluation of OJT results</li> <li>Presentation on enlightening campaigns for mine safety</li> </ul>	Change Objectives Extend schedule
9th	12/11/16	12/17/16	<ul style="list-style-type: none"> <li>Joint Coordinating Committee (JCC) meeting</li> </ul>	11/27/16	12/24/16		<ul style="list-style-type: none"> <li>Formulation of implementation plan on OJT using the manuals, using monitoring instruments and using technical skills of the risk assessment method by WTs and participants</li> <li>Implementation of OJT using the manuals of mine safety inspection, using monitoring instruments and using technical skills of risk assessment method at a mine site</li> <li>Evaluation of OJT results and summarization of problems</li> <li>Revision of Mine Safety Inspection Manuals and mine rating standards, and preparing "the Annual Inspection Plan"</li> <li>Lectures on methods of storage and sharing the inspection-reports, suggestions of a Training System and a Training Organization to develop human resources of mine safety</li> <li>Holding a Workshop on mine safety</li> <li>Holding the overall JCC meeting</li> </ul>	Change Objectives Extend schedule



**Minutes of the Joint Coordination Committee (JCC)**  
**for**  
**The Project on Capacity Development for Mining Administration**  
**in**  
**The Kingdom of Cambodia**

The Joint Coordination Committee for the Project on Capacity Development for Mining Administration in the Kingdom of Cambodia (hereinafter referred to as “the Project”) was held on 21 December 2015, under the chairmanship of HE. Dith Tina, Secretary of State, Ministry of Mineral and Energy (hereinafter referred to as “MME”) and Project Director of the Project.

The members joining the JCC include HE. Yos Monyrath Project Manager, Director General of General Department of Mineral Resources (hereinafter referred to as “GDMR”), Mr. Takashi Ito, Senior Representative of Japan International Cooperation Agency (hereinafter referred to as “JICA”), Committee members, Working Team members assigned from GDMR’s staffs and JICA Expert Team.

Both GDMR/MME and JICA agree to make this Minutes of Meeting regarding the Project, in order to confirm the mutual understandings reached through the discussion as attached hereto.

Phnom Penh, 23 December 2015 



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Mr. Sakae Kashima  
General Manager of the Project  
JICA Short-term Expert  
Japan



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HE. Tina DITH  
Project Director  
Ministry of Mines and Energy  
Kingdom of Cambodia

The attached document

The meeting was held on 21<sup>st</sup> December, 2015 at Tboung kandieng room of GDMR/MME, under the chairmanship of HE. Dith Tina, Secretary of State, MME and Project Director of the Project on Capacity Development for Mining Administration. Other members from JICA Cambodia Office, GDMR counterparts and working team members attending this meeting (see Appendix 1 for the list of participants).

(I) The meeting consists of 5 agendas:

1. Opening address
2. General Work Flow
3. Reporting of Annual Activity in 2015 (Database)
4. Reporting of Annual Activity in 2015 (Mine safety)
5. Closing remark

(II) Decisions Made

Progress situation of The Capacity Development for Mining Administration  
Project

Appendixes:

1. List of participants
2. Agenda of the JCC

Annexes:

1. Project Design Matrix (PDM) Version 0
2. Progress situation of The Project



Appendix 1

The Joint Coordination Committee

List of Participants

MME/GDMR		
1	H.E. Dith Tina	Project Director (Secretary of State, MME)
2	H.E. Yos Monyrath	Project Manager (Director General, GDMR)
3	Mr. Peng Navuth	Member (Deputy Director General, GDMR)
4	Mr. Sieng Sotham	Member (Director, DoG, Leader of DB WT)
5	Mr. Teang Sokhom	Member (Director, DoMRPD, Leader of MSL WT)
6	Mr. Hong Bona	WT Member (Deputy Director, DoCMR)
7	Mr. Lai Zanith	WT Member (Deputy Director, DoM)
8	Mr. Mean Thay	WT Member (Chief Officer, DoMPRD)
9	Mr. Im Sim	WT Member (Chief Officer, DoG)
10	Mr. Touch Menglay	WT Member (Chief Officer, DoCRM)
11	Mr. Kang San	WT Member (Vice Chief Officer, DoCRM)
JICA Cambodia Office		
12	Mr. Takashi Ito	Senior Representative, JICA Cambodia Office
13	Mr. Toshikazu Watanabe	Representative, JICA Cambodia Office
JICA Expert Team		
14	Mr. Akira Shichinohe	Long Term Expert
15	Mr. Sakae Kashima	General Manager of Short Term Expert Team
16	Mr. Atsyshi Aoki	Short Term Expert (Mine Safety)
17	Mr. Kry Meng Ang	Interpreter
18	Ms. Nov Kunthea	Assistant of Long Term Expert

DoMRPD      Department of Mineral Resources Promotion and Development  
DoCRM      Department of Construction Material Resources  
DoM          Department of Mining  
DoG          Department of Geology





**Project Design Matrix (PDM) – version 0**

Project Name: The Project on Capacity Development for Mining Administration  
 Implementation Agency: General Department of Mineral Resources (GDMR), Ministry of Mines and Energy (MME)  
 Project Area/Location: Whole of Country  
 Direct Beneficiaries: GDMR of MME, Provincial Department of Mines and Energy (DME)  
 Indirect Beneficiaries: Mineworkers in Cambodia  
 Project Period: From implementing the first input until March 2020.

Date: December 21, 2015

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p><u>Overall Goal</u></p> <p>Mine development is safely carried out in Cambodia</p>	<p>The number of accidents at mines is reduced.</p>	<p>The records at GDMR</p>	
<p><u>Project Purpose</u></p> <p>To enhance the capacity of mine safety at GDMR</p>	<ol style="list-style-type: none"> <li>1. The coverage of inspections is xx% (the rate of conducting inspections out of the total number of mines in operation)</li> <li>2. The number of instruction is xx and the contents of instruction are appropriate.</li> </ol>	<ol style="list-style-type: none"> <li>1, 2 and 3</li> </ol> <p>The records at GDMR and the monitoring sheet of the Project</p>	<p>The bill of safety law formulated by the Project is enacted according the procedure in Cambodia.</p>
<p><u>Outputs</u></p> <ol style="list-style-type: none"> <li>1. To formulate the draft law of mine safety and strengthen the enforcement system of the law</li> <li>2. To establish a database for mining management</li> <li>3. To enhance the capacity of human resources of GDMR to maintain mine safety practices sustainably</li> </ol>	<ol style="list-style-type: none"> <li>1-1 The drafted safety law</li> <li>1-2 The number of inspections is xx as planned at the beginning of the year</li> <li>2-1 The prescribed form for database</li> <li>2-2 The database is updated as defined in the manual prepared in the Project</li> <li>3-1 All participants (ten staffs of GDMR) in the short-term training program disseminate what they learned to their colleagues and staff of DME.</li> <li>3-2 The six staffs of GDMR acquire the master degree through the long-term training program)</li> </ol>	<ol style="list-style-type: none"> <li>1-1 The monitoring sheet of the Project</li> <li>1-2 The monitoring sheet of the Project</li> <li>2-1 The monitoring sheet of the Project</li> <li>2-2 The records at GDMR and the monitoring sheet of the Project</li> <li>3-1 The monitoring sheet of the Project</li> <li>3-2 The monitoring sheet of the Project and interview with the chief of each office of GDMR</li> </ol>	<p>The counterparts trained in the Project do not resign.</p> <p>Mines in Cambodia do not get serious damages by the natural disaster.</p>



Activities	Input	Japanese side:	To be confirmed
<p>&lt;Formulation of the draft of mine safety law&gt;</p> <p>1-1 Formulate the working team for drafting the mine safety law</p> <p>1-2 Draft the mine safety law (including the item of submission of mine operation plan and waster water quality standard, etc.)</p> <p>&lt;Establishment of enforcing system of the mine safety law&gt;</p> <p>1-3 Prepare the annual inspection plan according to the drafted law (including the items of inspections)</p> <p>1-4 Define the responsibilities of safety staff at the GDMR and DME (responsibilities, reporting process on inspection, etc.)</p> <p>1-5 GDMR assigns the staff responsible for mine safety at GDMR and define the responsibilities of each staff about safety work</p> <p>1-6 Prepare the format of inspection report on mine safety</p> <p>&lt;Strengthening of enforcing the mine safety law (strengthening of capacity of inspections)&gt;</p> <p>1-7 Carry out OJT on practice of inspection targeting the staff responsible for mine safety at GDMR and DME</p> <p>1-8 Prepare the annual inspection plan for next year based on the inspection results</p> <p>2-1 Formulate the working team for building a database</p> <p>2-2 Review the mine information that GDMR holds</p> <p>2-3 Define the detailed items of cadastral information, information relating to mines and relating to mineral resources to be input into the database</p> <p>2-4 Define management system of database (GDMR assigns staff in charge of database and frequency of update, etc.)</p> <p>2-5 Input the cadastral information into the database</p> <p>2-6 Input the information relating to mines (such as mine site, deposit-type-size-volume, operation information, production data, mine-safety information, mine environmental information, etc.)</p> <p>2-7 Input the information relating to mineral resources (such as geology, RS analysis information, exploration information, ore volume, etc.)</p> <p>2-8 Define the data items necessary to enforce the mine</p>	<p><u>Input</u></p> <p><u>Cambodian Side:</u></p> <p>1. Counterpart personnel</p> <p>2. Building(s), rooms and facilities for the office and necessary facilities for the Japanese experts.</p> <p>- Buildings and space necessary for the equipment and facilities to be provided by JICA</p> <p>3. Expenses</p> <p>- Cost for office space/facilities (including cost for electricity, water, communication, etc.)</p>	<p><u>Japanese side:</u></p> <p>1. Dispatch of Experts</p> <p>-Long-term expert: 1 personnel</p> <p>-Short-term experts: 6 personnel</p> <ul style="list-style-type: none"> <li>• Project manager</li> <li>• Deputy Project manager</li> <li>• Mine safety law</li> <li>• Database (Leader of database)</li> <li>• Database (mine information)</li> <li>• Database (Geology, mineral resources and Exploration data)</li> </ul> <p>2. Training in Japan</p> <p>-Long-term Training Program at Graduate School in Japan (Master degree course in mine)</p> <p>-Short-term Training Program in Japan</p> <p>3. Expenses</p> <p>- Necessary expenses for Japanese experts</p>	<p>The counterpart responsible for mine safety law, inspection, and database is officially assigned.</p>

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<p>safety law and input those data into the database</p> <p>2-9 Prepare a manual of operation and maintenance of database</p> <p>2-10 Update the database according to the manual</p>	<p>&lt;Short-term Training Program &gt;</p> <p>3-1 Select the candidates from GDMR staff to participate in the short-term training program in Japan</p> <p>3-2 Participate in the short-term training program in Japan</p> <p>3-3 Organize the sharing workshop and give feedback about the results of the training program to other staff of GDMR</p> <p>&lt;Long-term Training Program &gt;</p> <p>3-4 Select the candidates from GDMR staff to participate in the master degree course of mine in Japan</p> <p>3-5 Participate in the master degree course at the graduate school in Japan including the internship program at Japanese private companies</p> <p>3-6 Organize the sharing workshop and give feedback about the results of the master degree course to other staff of GDMR</p>
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## Annex 2

### Progress situation of The Project

#### 1. Establish the drafting Mine Safety Law and its Regulation

In the year 2015, JICA Short Term Experts (STEs) for Mine Safety visited five times to GDMR office and transferred draft of Mine Safety Law and its Regulation to the working team members selected in the GDMR staffs (WTs) through lectures.

In future GDMR/MME aims realization of establish the legislative system of Mine Safety, but it needs a lot of time and difficulties.

For example;

- There are no technical terms for mining in Khmer.
- GDMR/MME staffs have not enough experience of management for mining activities and mine safety.

#### 2. Establish the GIS database

The three STEs for GIS Database establishment have visited Cambodia eight times in total and stayed at Phnom Penh for more than eight months in total in 2015 and the Database WTs started to create the database on March 2015 through On-the-Job Training during the stay of STEs.

They had almost completed the database, 80~90% of data had imputed.

On the other hand, the STEs have created the manuals how to create and manage the database.

#### Comments

- Previously GDMR installed Database system made by IT vendor, but after all GDMR staffs didn't use that system by reason of it couldn't update by themselves and many bugs.
- This time The Database was created by WTs under assist of STEs, and they can updating and maintenance themselves also have manuals.

#### Recommendation from JICA


- To make the internal rule how to and who use the manuals, assign operators for input revise data and decide the person in charge of administration for ensure operation of the Database. 著



**Minutes of the Joint Coordination Committee (JCC)**  
**for**  
**The Project on Capacity Development for Mining Administration**  
**in**  
**The Kingdom of Cambodia**

The Joint Coordination Committee for the Project on Capacity Development for Mining Administration in the Kingdom of Cambodia (hereinafter referred to as "the Project") was held on 20 February 2017, under the chairmanship of H.E. Dith Tina, Secretary of State, Ministry of Mines and Energy (hereinafter referred to as "MME") and Project Director.

The members joining the JCC include H.E. Yos Mony Rath, Project Manager, Director General of General Department of Mineral Resources (hereinafter referred to as "GDMR"), Mr. Adachi Itsu, Chief Representative of Japan International Cooperation Agency (hereinafter referred to as "JICA"), Committee members, Working Team members assigned from GDMR's staffs and JICA Expert Team.

Both GDMR/MME and JICA agree to make this Minutes of Meeting regarding the Project, in order to confirm the mutual understandings reached through the discussion as attached hereto. 

Phnom Penh, 20 February 2017



\_\_\_\_\_  
Dr. Takahata Hiroyuki  
JICA Short-term Expert  
Japan



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H.E. Dith Tina  
Project Director  
Secretary of State  
Ministry of Mines and Energy  
Kingdom of Cambodia



The attached document

The meeting was held on 20 February, 2017 at conference room of GDMR/MME, under the chairmanship of H.E. Dith Tina, Secretary of State, MME and Project Director of “The Project on Capacity Development for Mining Administration”. Other members from JICA Cambodia Office, GDMR counterparts and working team members attending this meeting (see Appendix 1 for the list of participants).

(I) The meeting consists of 5 agendas:

1. Opening Address
2. Report of Progress of the Project (Mine Safety Team)
3. Report of Database created in this Project
4. Report of the Long-term Expert Activities
5. Closing remark

(II) Decisions Made

Results of the Capacity Development for Mining Administration refer to the attached in Annex 2. “Results of the Project”.

Appendixes:

1. List of participants
2. Agenda of the JCC

Annexes:

1. Project Design Matrix (PDM) Version 2
2. Results of the Project

Appendix 1

The Joint Coordination Committee

List of Participants

MME/GDMR		
1	H.E. Dith Tina	Project Director (Secretary of State, MME)
2	H.E. Yos Monyrath	Project Manager (Director General, GDMR)
3	Mr. Peng Navuth	Member (Deputy Director General, GDMR)
4	Mr. Mok Sopheak Tra	Member (Deputy Director General, GDMR)
5	Mr. Sieng Sotham	Member (Director, DoG, Leader of DB WT)
6	Mr. Chrea Vichet	Member (Director, DoMEM)
7	Mr. Nuon Norin	Member (Director, DoM)
8	Mr. Hing Tonn	Member (Director, DoCMR)
9	Mr. Phay Chan Traseth	Member (Director, DoMRPD)
	Mine safety and Database working team members	GDMR staffs
JICA Cambodia Office		
1	Mr. Adachi Itsu	Chief Representative, JICA Cambodia Office
2	Mr. Watanabe Toshikazu	Representative, JICA Cambodia Office
3	Dr. Hosoi Yoshitaka	Senior Advisor, JICA Head Office
JICA Expert Team		
4	Mr. Shichinohe Akira	Long Term Expert
5	Dr. Takahata Hiroyuki	Short Term Expert (Mine Safety)
6	Mr. Aoki Atsushi	Short Term Expert (Mine Safety)
7	Mr. Onuma Takumi	Short Term Expert (Database)
8	Mr. Suzuki Ioki	Short Term Expert (Database)
9	Dr. Isei Takehiro	Short Term Expert (Mine Safety)

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**The Joint Coordination Committee (the third time) of  
the Project on Capacity Development for Mining Administration  
in Kingdom of Cambodia**

**Agenda**

**Date: February 20, 2017**

**Place: GDMR conference room (4F)**

**10:30 ~ 11:00 Opening Address**

**H.E. Dith Tina** Secretary of State, Ministry of Mines and Energy  
Kingdom of Cambodia, Project Director

**Mr. Adachi Itsu** Chief Representative of Japan International  
Cooperation Agency (JICA) in Cambodia Office

**11:00 ~ 11:20 Report of Progress of the Project (Mine Safety Team)**

**Mr. Aoki Atsushi** Short-term Expert of JICA Project

**11:20 ~ 11:40 Report of Database created in this Project**

**Mr. Onuma Takumi** Short-term Expert of JICA Project

**11:40 ~ 12:00 Report of the Long-term Expert Activities**

**Mr. Shichinohe Akira** Long-term Expert of JICA

**12:00 ~ 12:15 Closing Remarks**

**H.E. Dith Tina** Project Director

**Dr. Hosoi Yoshitaka** Senior Advisor  
JICA Head Office *he*

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## Project Design Matrix

**Project Title:** The Project on Capacity Development for Mining Administration

**Version 2**

**Implementing Agency:** General Department of Mineral Resources (GDMR), Ministry of Mines and Energy (MME)

**Dated 20, Feb., 2017**

**Target Group:**

**Period of Project:** From implementing the first input until March 2020

**Project Site:** Whole of Country      **Model Site:**

Narrative Summary		Objectively Verifiable Indicators	Means of Verification	Important Assumption
<b>Overall Goal</b>	Mine development is safely carried out in Cambodia	The number of accidents at mines is reduced.	The records at GDMR	
<b>Project Purpose</b>	To enhance the capacity of mine safety at GDMR	1. The coverage of inspections is xx% (the rate of conducting inspections out of the total number of mines in operation) 2. The number of inspection is xx and the contents of inspection are appropriate.	1, 2 and 3 The records at GDMR and the monitoring sheet of the Project	The bill of mine safety law formulated by the Project is enacted according the procedure in Cambodia
<b>Outputs</b>	1. To formulate the draft law of mine safety and strengthen the enforcement system of the law	1-1 The draft Mine Safety Law	1-1 The monitoring sheet of the Project	The counterparts trained in the Project do not resign.
		1-2 The number of inspections is xx as planned at the beginning of the year	1-2 The monitoring sheet of the Project	Mines in Cambodia do not get serious damages by the natural disaster



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<p>2. To establish a database for mining management</p>	<p>2-1 The prescribed form for database</p>	<p>2-1 The monitoring sheet of the Project</p>	
<p>3. To enhance the capacity of human resources of GDMR to maintain mine safety practices sustainably</p>	<p>2-2 The database is updated as defined in the manual prepared in the Project</p> <p>3-1 All participants (ten staffs of GDMR) in the short-term training program disseminate what they learned to their colleagues and staff of DME</p> <p>3-2 The six staffs of GDMR acquire the master degree through the long-term training program)</p>	<p>2-2 The records at GDMR and the monitoring sheet of the Project</p> <p>3-1 The monitoring sheet of the Project</p> <p>3-2 The monitoring sheet of the Project and interview with the chief of each office of GDMR</p>	

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Activities	Inputs		Important Assumption
	Cambodian Side	The Japanese Side	
<p>&lt;Formulation of the draft of mine safety law&gt;            1-1 Formulate the working team for drafting the mine safety law            1-2 Draft the mine safety law (including the item of submission of mine operation plan and waster water quality standard, etc.)            &lt;Establishment of enforcing system of the mine safety law&gt;            1-3 Prepare the annual inspection plan according to the drafted law (including the items of inspections)            1-4 Define the responsibilities of safety staff at the GDMR and DME (responsibilities, reporting process on inspection, etc.)            1-5 GDMR assigns the staff responsible for mine safety at GDMR and define the responsibilities of each staff about safety work            1-6 Prepare the format of inspection report on mine safety            &lt;Strengthening of enforcing the mine safety law (strengthening of capacity of inspections)&gt;            1-7 Carry out OJT on practice of inspection targeting the staff responsible for mine safety at GDMR and DME            1-8 Prepare the annual inspection plan for next year based on the inspection results</p>	<p>1. Counterpart personnel            2. Building(s), rooms and facilities            - Office and necessary facilities for the Japanese experts            - Buildings and space necessary for the equipment and facilities to be provided by JICA            3. Expenses            - Cost for office space/ facilities (including cost for electricity, water, communication, etc.)</p>	<p>1. Dispatch of Experts            -Long-term expert: 1 personnel            -Short-term experts: 7 personnel            •Project manager            •Deputy Project manager            •Mine safety law            •Mine safety law            • Database (Leader of database)            • Database (mine information)            • Database (Geology, mineral resources and Exploration data)            2. Training in Japan            -Long-term Training Program at Graduate School in Japan (Master degree course in mine)            -Short-term Training Program in Japan            3. Expenses            - Necessary expenses for Japanese</p>	<p>To be confirmed</p> <p><u>Preconditions</u></p> <p>The counterpart responsible for mine safety law, inspection, and database is officially assigned.</p>

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Results of the Project

1. Formulation of draft Mine Safety Law

In the year 2015/2017, JICA Short Term Experts (STEs) for Mine Safety visited GDMR eleven (11) times and transferred draft of Mine Safety Law and its Regulations, some Manuals for enforcing system of the Law and applicable regulations, and introduced promotion of enlightening campaigns for mine safety, and conducted four (4) times of On-the-Job Training (OJT) on a general inspection and a special inspection for strengthening of capacity of inspections for mine safety to Working Team members (WTs) selected in the GDMR staffs.

GDMR/MME tries to coordinate formulation of draft Mine Safety Law at present and STEs for mine safety and hope that the Law and its ministerial ordinances shall be established in the near future.

When establishing the Law, GDMR/MME needs to review the supervised governmental organization of GDMR, and to designate mine safety inspectors for supervision and guidance toward the concessionaires at mines and quarries, as same as GDMR/MME also sets out to solve following issues for uplifting mine safety awareness toward the concessionaires and mineworkers throughout the country.

The issues taken the lead by GDMR:

- Propagation of Mine Safety Law and its Regulations into the concessionaires and mineworkers
- Establishment of a mine safety training system targeted on nominated mine safety inspectors
- Establishment of a mine safety training system targeted on nominated mine safety engineers at mines and quarries
- Promotion of enlightening campaigns for mine safety
- Supervision and guidance for establishment of "Safety Rules" by the concessionaires

2. Establish the GIS database

Three STEs in charge of GIS Database establishment have visited Cambodia fourteen times with nine months stay in total. The Database WTs have created the GIS database through On-the-Job Training by STEs. The GIS database of the latest information was completed; though there were some issues/problems in the database. *h*

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The STEs on GIS database have created the manuals for how to create, update and manage the database. The GIS database was saved in the server which was prepared by GDMR and will be operated by GDMR.

### 3. Comments

On behalf of all GDMR/MME attendants, H.E. Dith Tina, Director of the Project, expressed gratitude to JICA short-term experts of mine safety and database for working diligently and producing good results through the implementation of the Project. And, explained that “The Annual Inspection Plan in 2017” should be announced at the annual general meeting of MME on 22 February 2017.

### 4. Recommendation from JICA

(1) According to the “Designing a Policy for an Annual Inspection plan”, one of the technology transferring items, GDMR/MME shall conduct a general inspection at mines and quarries continuously after implementation of the Project.

(2) GDMR should train to place a responsible person who will manage and revise the database and how to manage the server securely.





## CERTIFICATE OF HANDOVER

Capacity Development for Mining Administration:

This is to certify that the equipments in the attached list for above-mentioned Project have been handed over properly as of Dec 15, 2016 to Ministry of Mines and Energy, General Department of Mineral Resources. Ministry of Mines and Energy, General Department of Mineral Resources will use and maintain the equipments properly in accordance with the purpose of the Project activity.

(Signature) 

Mr. Sakae KASHIMA  
General Manager of the Project  
Japan International Cooperation  
Agency (JICA) Expert

(Signature) 

H.E Yos MONY RATH  
Director General  
Ministry of Mines and Energy  
General Department of Mineral  
Resources

Dec 15, 2016  
Kingdom of Cambodia

(Attachment-1)

### List of Equipment

No.	Name of Item	Qty	Place of Installment	Date of Handover
1	Water quality monitoring and sampling instruments	1set	GDMR Office	Dec 15, 2016
2	Sound-level monitoring meter	1set	GDMR Office	Dec 15, 2016
3	Vibration-level monitoring meter	1set	GDMR Office	Dec 15, 2016
4	Dust meter	1set	GDMR Office	Dec 15, 2016
5	Inspection-site recording instruments	1set	GDMR Office	Dec 15, 2016
6	Manual Set	1set	GDMR Office	Dec 15, 2016
7	Weather observation instrument	1set	GDMR Office	Dec 15, 2016



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(Attachment-2)

## Detail List of Equipment

Discription of Goods					Details of Items						
Equipment	Manufacturer	Model	QTY	Serial No.	Item	QTY					
Water quality monitoring and sampling instruments	Oyo Corporation	4676	1 set	778050	<b>Multi Water Quality Meter Model 4676</b>	1					
					Indicator Model 4676 S/N 746700	1					
					Connecting cable 2m Code No. 04676-9111	1					
					AA battery 1.5V	2					
					Tool for Multi Meter	1					
					Plastic cup for calibration work	2					
					pH standard buffer solution pH4.01 500ml Code No. 143F191	1					
					pH standard buffer solution pH6.86 500ml Code No. 143F192	1					
					Electrolyte R-9 50ml Code No. 143A040	1					
					Internal filling gel 50ml Code No. 143F235	1					
					Liquid junction Type 6784580K	1					
					Diaphragm 6789790K	2					
					Tool for Indicator	1					
					Grease	1					
					AA battery 1.5V	3					
	Techno International Trading Co., Ltd.	3-PS-0005-PC	1 set	W11020	<b>Water Pump Mini-Monsoon model 3-PS-0005-PC</b>	1					
					Water pump controller	1					
					Water pump water hose	1					
					Water pump reserve cap	1					
	Techno International Trading Co., Ltd.	1-B-0001	1 set		<b>Bailers water samplers made of high-density polyethylene</b>	24					
Sound-level monitoring meter	Rion Co., Ltd.	NL-42	1 set	00169428	<b>Sound-level Monitoring Instrument NL-42EX</b>	1					
					SDHC card 512MB	1					
					AA battery 1.5V	4					
					Hard case	1					
					Tripod model ST-80	1					
Vibration-level monitoring meter	Rion Co., Ltd.	VM-55	1 set	01250546	<b>Vibration-level Meter VM-55</b>	1					
					Vibration pick up model PV-83C	1					
					Connection cable model EC-54S	1					
					Hard case	1					
					SDHC card 512MB	1					
					AA battery 1.5V	8					
Dust meter	Sibata Scientific Technology Ltd.	LD-3K2	1 set	617478	<b>Digital Dust Monitor LD-3K2</b>	1					
					Connection cable model US6ST0001789	1					
					AA battery 1.5V	8					
					Battery holder	1					
					AC adaptor model PA-314	1					
					Soft case	1					
					Tripod adddopter	1					
					Inspection-site recording instruments	Nikon	COOLPIX S33 (x 2 set)	2 set	21034858	<b>Compact digital camera</b>	1
										AC adopter	1
USB communication cable	1										
Brush	1										
Soft case	1										
Li-ion battery installed in camera	1										
Garmin	eTrex 20x (x 2 set)	2 set	470033192	<b>Compact digital camera</b>		1					
				AC adopter		1					
				USB communication cable		1					
				Brush		1					
				Soft case		1					
				Li-ion battery installed in camera		1					
			1 set		<b>GPS device</b>	1					
					USB communication cable	1					
					AA battery 1.5 installed in GPS device	2					
					<b>GPS device</b>	1					
			1 set		USB communication cable	1					
					AA battery 1.5 installed in GPS device	2					
Manual Set			1 set		Manual set for all equipments: A, B, C, D, E, F, G, H and I	1					
Weather observation instrument	Vaisala KK	WXT520	1 set	M0510059	<b>Weather Transmitter WXT520</b>	1					
					10-meter cable	1					
					Datalogger model TAMAPOD S-XT installed in plastic case	1					
					Lock key for plastic case	1					
					SDHC card 2GB	1					
					Solar power panel model DB010-12	1					
					Observation pole 3 m	1					
Bushing and Grounding Kit 222109	1										