



# **Cambodian Mine Action Standards (CMAS)**

## **Chapter 17**

### **Information Management**

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# Information Management

## Introduction

The Cambodian Mine Action Standards for Information Management (CMAS IM) is the regulatory framework for the management of mine action information in the Kingdom of Cambodia. CMAA shall be responsible for developing, reviewing and updating of the CMAS IM whenever necessary to reflect and adapt it to the current mine action context in the country.

The CMAS IM is based on, and generally comply with, the International Mine Action Standards for Information Management (IMAS IM). It is designed to integrate all parts of mine action activities within Cambodia. This includes the process to continually specify and improve information requirements, the collection, analysis and provision of timely information to the relevant mine action stakeholders.

Efficient information management ensures that mine action management, operations and other stakeholders have access to accurate and relevant information when making decisions. To be efficient, information management requires the close collaboration of all parties in a mine action sector. Transparent information ensures accountability and effective management. It enables monitoring, measuring, evaluation and comprehensive quality management of mine action activities.

This standard provides general guidelines for mine action operators to establish information management units within their programmes. This document will also assist in developing and implementing information management guidelines, and Standard Operating Procedures (SOPs).

## 1 Scope

This standard defines obligations and responsibilities of different organizations on information management in Cambodian mine action sectors.

## 2 Terms and definitions

A general terms and definitions used in this CMAS is explained below:

- The term 'Information Management' refers to the on-going specification of information requirements, its collection and analysis followed by the dissemination of relevant information to relevant stakeholders in a timely manner.
- The term 'information management system' or 'IMS' refers to those persons, procedures, data, software or media that are used to carry out information management.
- The term 'Data' refers to information in raw or unorganised form.
- The term 'Information' refers to data that has been processed, organised and presented in a way that makes it useful for decision-making.
- The term 'Knowledge' refers to the result of combining data, information, training and experience.
- The term 'GIS' refers to Geographic Information System. It is an organised collection of computer hardware, software, geographic data and personnel designed to efficiently capture, store, update, manipulate, analyse and display all forms of geographically referenced information.
- The term 'Stakeholder' refers to a person, group, organisation or governmental body that has a direct or indirect stake in a mine action sector. A stakeholder can affect or be affected by the mine action activities and policies.
- The term 'IMSMA' refers to the Information Management System for Mine Action.
- Cleared Land (C3): Areas released through clearance
- Reduced Land (C2): Areas released through technical survey
- Cancelled/Reclaimed Land (C1): Areas released through non-technical survey

## 3 Purpose of information management in mine action

This standard provides general principles and guidelines for information management (IM) in mine action programmes in Cambodia. The CMAA shall ensure that the National Database for Mine Action (currently used system is "IMSMA") remains the only official national system for the management of mine action information and that it is used by all mine action agencies and stakeholders. CMAA shall ensure that the mine action operators develop and implement their own IM standards and operating procedures (SOPs) that comply with CMAS IM.

### 3.1 Request for information

Certain information is available from the CMAA website at [www.cmaa.gov.kh](http://www.cmaa.gov.kh). Request for specific information from the CMAA database is to be submitted in writing to the

Secretary General of CMAA. The request can be submitted electronically using the information request form published on the CMAA website.

### **3.2 Maintenance of national database**

The national database shall be continually updated with data obtained from mine action operators and agencies operating in Cambodia. The quality of the national database is only as good as the quality of the data that is put into it. It is the responsibility of all mine action operators and agencies to provide timely and accurate data to the CMAA to ensure that the database remains accurate and up to date.

## **4 IM Requirements**

### **4.1 Human resources**

#### **4.1.1 CMAA Information Management Unit (IMU)**

The CMAA shall ensure that the IMS has staff to fulfil the following functions:

- Database management;
- Data entry;
- Data QA/QC;
- Data update;
- GIS analysis;
- System administration – IT and communication infrastructure;
- Graphic design and web development;
- Programming;

#### **4.1.2. Mine Action Operators**

Mine Action Operators should have the responsibility to ensure that their IM sections have staff to fulfil the following functions:

- Database management;
- Data entry;
- Data QA/QC;
- Data update;
- GIS analysis;
- System administration – IT and communication infrastructure;
- Other functions if necessary

#### **4.1.3. Provincial Mine Action Planning Unit (MAPU)**

MAPU should have the responsibility to ensure that their IM sections have staff to fulfil the following functions:

- Database management;
- Data entry;
- Data QA/QC;
- Data update;
- GIS analysis;
- System administration – IT and communication infrastructure;

- Other functions if necessary

#### 4.1.3. IM knowledge (experience and qualifications)

All IM staff should be given the opportunity for professional development through a staff capacity building program:

- Staff are trained in the administration and maintenance of IM system and regularly receive refresher training;
- Staff are trained in data and statistical analysis skills to retrieve information from IM system;
- Staff are trained in basic GIS, GPS, compass, map reading and sketch drawing etc.
- Staff should be given at least basic knowledge of mine action operations;
- Relevant operational staff should be included in IM trainings as often as possible.
- Others if necessary

## 4.2 IM equipment

### 4.2.1 CMAA Information Management Unit (IMU)

The CMAA shall ensure that the IMU has the following:

- Server storage system;
- Computer systems equipped with IM software;
- Software is licenced and there are appropriate peripheral systems such as printers and scanners;
- IT equipment is protected from power spikes, dust and other damage;
- Data storage infrastructure is established and protected with appropriate policies and procedures for data security, backup and disaster recovery;
- Access to means of communication e.g. internet and e-mail;
- External hard drive or cloud storage;
- Latest version of hardware and software as affordable and applicable

### 4.2.2 Mine Action Operators

Operators shall ensure that their IMU has the following:

- Server storage system;
- Computer systems equipped with IM software; GIS software
- Licenced software and appropriate peripheral systems such as printers and scanners;
- Data storage infrastructure is established and protected with appropriate policies and procedures for data security, backup and disaster recovery;
- Others if necessary

### 4.2.3 GIS management

The use of GIS application in mine action is to capture, manage, analyse, and display

contaminated areas in a geographical reference.

The software should be either integrated in the record management system or work as a stand-alone application. CMAA shall also ensure that geospatial data and the official gazetteer is available and accessible.

CMAA IMU have established spatial data standards regarding the use of coordinate system and administrative structure. The following standards shall be used by all organisations working in the Cambodian mine action program:

- GPS Datum reference 'India 1960' Universal Transverse Mercator (UTM) Zone 48N and other Datum agreed from CMAA;
- Gazetteer from ministry of interior.

### **4.3 Data collection formats**

The data collection formats define how and what data (including sex and age disaggregated data (SADD)) should be collected. Data collection formats are designed to provide the data necessary to produce the required information products with consideration given to ethical principles such as maintaining respect for confidentiality and privacy.

The CMAA authorizes all standardized reporting formats for collecting data for their own systems. To collect and report to the CMAA, operators shall use the standard reporting formats developed by CMAA. If needed, individual operators should develop internal reporting formats for their own use. Descriptions of the current standard reporting formats can be found in Annex C – Standard data collection formats.

### **4.4 Policies**

#### **4.4.1 Sharing information publicly**

The CMAA shall ensure that there are policies and methodologies in place that enable mine action operators or agencies to present its mine action information to the public via web technologies and/or through other means. It is the responsibility of each mine action operator to ensure that they are abiding the policies in this standard when sharing information.

#### **4.4.2 Security policy**

The CMAA IMU shall define a security policy as the following:

- Requirements for the use, protection and maintenance of the equipment of the IM section;
- Access rights for users to the information system.
- The security policy can be found in Annex B – IM security policy

#### **4.4.3 Backup policy**

IMU shall ensure the security of its data, document, photo ...etc by performing backups and store in secure locations. Backups should be tested regularly to ensure that data can be restored.

#### **4.4.4 Information sharing policy**

IMU manages large amount of mine action data that needs to be shared within the Unit and with other stakeholders. CMAA and mine action operators shall develop their own procedures on information sharing with the purpose of minimizing the risk of information loss, unauthorised disclosure, modification or removal of the information.

## **5 Information management processes**

IMU is responsible for all aspects of operational IM in the mine action sector. Specific responsibilities of operational IM are described below.

### **5.1 Processes**

IMU shall develop process mappings that describe the required steps to collect, quality control and enter data into the national information management system and to then transform data through analysis to the required information outputs in a consistent, accurate and correct manner. IMU is responsible for development of SOPs for information management process (data flow, QA/QC process, data retrieving, data analysis, dissemination and others as necessary)

### **5.2 Information Needs Assessment**

The information needs assessment should be a continual process to consult with mine action operators and stakeholders and assess whether information products meet their requirements.

The CMAA shall ensure the IM needs assessment defines:

- Agreement on information required by stakeholders
- Data that needs to be collected to produce the required outputs, at which frequency, and in what format and means;
- Processes that describe the collection, analysis and quality control of data to ensure high quality data inputs;
- Processes that describe the required steps to transform the data collected in the field into the required information outputs in a consistent, accurate and correct manner;
- Formats and means of internal and external information dissemination and reports.

### **5.3 Unit of measurement**

Measurement units:

- Distances are measured in meters (m);
- Areas are measured in square meters (m<sup>2</sup>);
- GIS calculated area is used for data analysis (m<sup>2</sup>)
- Operational area is used for reporting (m<sup>2</sup>)
- Bearing is measured as degree (clockwise)
- Data format of coordinate system is displayed in UTM (meter)

### **5.4 Data collection**

Mine action operators have responsibility to provide formal reports on their operations to CMAA through the standard data collection formats.

Mine action operators shall send operational reports to CMAA and MAPUs the followings:

**Send to MAPU:**

- Monthly progress report (Clearance, EOD, MRE, deployment plan) 1 week in the following month
- Original completion reports with hand over report 2 weeks in the following month
- List of baseline survey report
- List of C1 report

**Send to CMAA via IMSMA with attachment**

- BLS report (Form I, II, III) 2 weeks after the task complete
- Land release report 4 weeks after the task completed.
- CMTS report 4 weeks after the task completed
- EOD 4 weeks after the task completed
- MRE 2 weeks after the task completed
- Monthly progress report 1 week in the following month
- Other if required

Mine action operators are responsible to report information in a timely manner, accurate complete. They shall develop internal QA/QC processes to ensure the quality and period of data/information submitted to CMAA.

## **5.5 Validation and storage of data**

CMAA shall ensure that Cambodian mine action information is stored centrally in national database at CMAA. The data should be regularly checked for consistency, completeness and correctness.

- Processes for validation of reports before entry in the database are well defined and understood;
- Processes for quality control of data in the database are well defined and understood;
- Quality control of data in the database is done regularly according to a defined schedule.

## **5.6 Quality control of report**

The CMAA and MAPUs are responsible to:

- Ensure that operators report is checked prior to submission to CMAA;
- Check incoming reports for correctness, completeness and accuracy. If reports are received with incomplete or inaccurate data the matter shall be raised with the relevant organisations and resolved before any information is distributed for use or entered into the CMAA database IM System;

Mine action operators are responsible to:

- Ensure that field operation report is checked and verified;
- Check incoming reports for correctness, completeness and accuracy
- Follow operators SOP IM and other relevant SOP

## 5.7 Data analysis

### 5.7.1 Data analysis

The CMAA should ensure consistency on data analysis:

- methodologies with relevant criteria for managing on low quality information such as duplicate, incomplete, out-of-date or non-primary source information;
- methodologies for grouping and structuring data by using summarised statistical reports and maps;
- methodologies for cross-referencing information from mine action and from other sources;

### 5.7.2 Reporting tools

CMAA is responsible to develop and maintain reporting tools (CMAA OneClickReport) to display analysed data from national database (IMSMA) for different users.

Dataset to report:

- Baseline survey data
- Land Release data
- EOD data
- MRE data
- Mine/ERW casualty data (Victim and Accident)
- Post Clearance Monitoring
- Quality Management data
- Quality of life survey
- Others

## 5.8 Information Dissemination

### 5.8.1 Standard reports

The CMAA is responsible to ensure that standard reports are defined to meet the requirements of each stakeholder.

Each standard report should be prepared by the CMAA. The standard reports should be continually revised with the feedback from stakeholders.

### 5.8.2 Dissemination

The CMAA is the only government body to share the official information to relevant stakeholders as required

## **6 Responsibility and obligations**

### **6.1 Cambodian Mine Action Authority:**

- Ensure the accountabilities and responsibilities for the management of information at appropriate levels within the CMAA;
- Provide close collaboration between the IMU and other departments on a regular basis
- Develop and implement the guidelines, standards and regulations for the management of information.
- Develop and maintain a security policy that clearly defines the requirements for the use, protection and maintenance of the IT equipment used in the CMAA;
- Establish an information management system that allow effective, efficient and timely transfers of data and information between MAPUs, mine action operators, donors, and other stakeholders;
- IMU have appropriate equipment, qualified personnel; and access to training.
- Coordinate with line ministries to obtain relevant information (gazetteer, population, ID poor, updated-base map, CDB, CIP data, etc.
- Develop standard operating procedures (SOP) or IM guideline for its routine work;
- Update datasets in the national database
- Enter approved work plans into the national database;
- Ensure confidentiality of sensitive information stored in national database;
- Conduct quality control of the data according to the QA/QC guideline;
- Continually review and update guideline as required
- Provide technical support and training to relevant departments of CMAA, MAPUs, operators and other stakeholders
- Diversify the use of technology to share the best practise with operators as well as to improve mine action information management.

### **6.2 Mine Action Operators**

- Develop their own IM SOPs that clearly define the type, format and frequency of the information required to be reported in accordance with the CMAS IM standards;
- Establish IM unit with appropriate equipment, qualified personnel; and access to training in accordance with CMAS IM.
- Share and exchange knowledge and experience on data management to CMAA and mine action stakeholder.
- Submit all relevant data and reports to CMAA as described in section “5.4.Data Collection”

## **Annex A – IM backup policy**

The data in CMAA/operators information management system shall be backed up regularly to avoid accident loss of data. The CMAA/operators shall ensure that:

- Backups of the CMAA/operators information systems are made regularly at a minimum once every week;
- Back up all data including attached documents, photos, videos etc. at least every 3 months by ensuring that the data is easily retrievable;

Principles that apply to backups and recovery are:

- Backups should be scheduled to take place regularly at a frequency depending on the amount of data that is entered during a certain amount of time.
- Backups should be scheduled to take place outside working hours when the information system is not in use ex. overnight or in the evening.
- Backups should be stored in a secure location, preferably in a different location from the original data but at least in a different room and on different hardware to avoid the loss of the original data and the backup at the same time.

## **Annex B – IM security policy**

The IT equipment of the CMAA/operators should only be used under supervised by personnel of the CMAA/operators. All personnel that use the IT equipment shall have read and signed a copy of the security policy before being allowed access to equipment.

All personnel that use the IT equipment of the CMAA/operators agree to:

- Only accept files through email or external peripherals if they come from trusted sources;
- Control that any external peripheral used for transfer of data is checked for viruses before transferring any files from them to the CMAA/operators equipment;
- Only use the IT equipment of the CMAA/operators for professional purposes;
- Familiarise themselves with the confidentiality rules for the data that the CMAA/operators handles and ensure that the rules for handling and sharing confidential data are followed; and
- Report any scams, hacking attempts and privacy breaches to the head of database management.
- IT equipment can only be accessed by registered users using username and password.
- All IT equipment is protected from viruses and external attacks by adequate and up to date anti-virus software.
- All IT equipment is protected from electrical spikes and outages through surge protectors and/or UPS if relevant.

### **Confidentiality of QM data**

- CMAA QM Teams conduct QA and QC of operators' teams working in the field. QA and QC data is recorded and stored in the national database. QA and QC data from one operator will not be shared with other mine action operators as it is confidential. As this data is important for management of the concerned operator, CMAA will allow management of the operator to have access to QA and QC data of their teams.

## **Annex C – Standard data collection forms**

- Baseline survey form (Form I and Form II)
- BLS remaining (Form III)
- Land release report form
- C1 report form
- EOD report form
- CMTS form
- Minefield Investigation
- MRE
- Post Clearance Monitoring
- Socio-Economic Development
- Quality Life Survey
- Mine /ERW accident form
- Mine /ERW victim form
- QM FORM
  1. QA AC: Accommodation
  2. QA ADS: Animal Detection System
  3. QA EOD: Explosive Ordnance Disposal
  4. QA ES: Explosive Store
  5. QA MC: Manual Clearance
  6. QA MD: Mechanical Demining
  7. QA ME: Medical Evacuation
  8. QA NTS BLS: Non-Technical Survey
  9. QC Form: QC on Land Release
  10. QC Form: QC on BLS
  11. QA on Museum