Cambodian Mine Action Sector Briefing Paper Series

Quality Assurance and Quality Control (QA/QC)

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Clearing for Results IV
Mine Action for Human Development
Briefing Paper: Quality Assurance (QA) and Quality Control (QC) Process of the Mine Action Sector in Cambodia

Purpose
This briefing paper provides an overview of Quality Assurance (QA) and Quality Control (QC) of humanitarian demining in Cambodia, its regulations, institutional arrangements, and lessons learned to contribute to knowledge management of the recognized practice of Quality Management Teams (QMT) in achieving an acceptable level of confidence that previously mine affected cleared land is safe for its intended use.

The overall aim of QA/QC is to provide confidence (to the public, the mine action operators, the national authorities, the donors, and other stakeholders) that quality criteria have been met and that mine action products and services (i.e., cleared land) are ‘fit for purpose’.

Introduction
Humanitarian mine clearance operations in Cambodia started in 1992 with the support of the United Nations Transitional Authority in Cambodia (UNTAC) to clear transportation routes enabling the repatriation of hundreds of thousands of Cambodian refugees living in camps in Thailand back to Cambodia. When clearance of the routes was completed, clearance operations shifted to clear land to support the resettlement of the returnees. Due to the magnitude of the landmine contamination in the country, the clearance was then extended to clear land for agriculture and productive use to support local reconstruction, recovery and development.

In the early days, clearance operators developed procedures to guide clearance activities based on military doctrines in the absence of national and international standards for humanitarian mine action. In late 1990s, the United Nations started developing International Mine Action Standards (IMAS) to guide national mine action programs develop National Mine Action Standards.

In Cambodia, the National Mine Action Standards are known as the Cambodian Mine Action Standards (CMAS). The first CMAS was developed in 2005, and by the end of 2021, Cambodia
developed 21 Chapters of CMAS¹ (4 in draft and 17 approved). The Cambodian Mine Action and Victim Assistance Authority (CMAA) leads on the development of the CMAS in consultation with representatives from national and international operators and key partners. All operators in Cambodia are required to develop Standard Operating Procedures (SOPs) for activities they are undertaking that are in compliance with the relevant CMAS.

**Definitions**

**Cambodian Mine Action Standards (CMAS)** set the requirements for operators working in Cambodia to develop Standard Operating Procedures (SOPs) to comply with.

**International Mine Action Standards (IMAS)** set the guidelines for the National Mine Action Authorities to develop National Mine Action Standards.

**Quality Assurance (QA)** is “part of quality management focused on providing confidence that quality requirements will be fulfilled”. QA is a confidence-building process, based on evidence, that the quality requirements are likely be met.

**Quality Control (QC)** is “part of quality management focused on fulfilling quality requirements”. QC addresses the question “did we get what we wanted?”. 

**Quality Management Team (QMT)** refers to CMAA’s three-person teams that are roving from one demining site to another to conduct QA/QC of operators’ field activities.

Mandate

The CMAA was established by the Royal Decree No. 160 in September 2000 with the mandate to regulate, coordinate and monitor the mine action sector in Cambodia. To implement its mandate on monitoring and oversight, the CMAA established the Regulation and Monitoring (R&M) Department that is tasked to develop the CMAS and conduct QA/QC of operators’ field activities through the QMT mechanism to ensure they are safe, effective, efficient and in compliance with the requirements of the CMAS.

The Regulation and Monitoring Department (R&M)

R&M Department consists of the Regulation, Monitoring, and Technical Offices. The Regulation Office is responsible for developing the CMAS, the Monitoring Office is responsible for monitoring conducted by the QMTs, and the Technical Office is responsible for organizing technical meetings and observing performance of new equipment on trial.

Based on CMAS, operators are required to develop SOPs for field activities they are undertaking, including for internal QA/QC. Operators conduct their own internal QA/QC whose results are documented in a logbook by the operators’ team leader. They are availed to QMTs for review, as and when requested.
To monitor operators’ field activities, the R&M deploys QMTs throughout the country. The QMTs conduct independent QA/QC of operators’ activities and compliance, and report to a Quality Management Manager who then reports to the Director of R&M Department.

**Quality Management Teams (QMTs)**

There are eight QMTs in total. Each QMT consists of three persons: the QMT Leader, Senior Member, and Member. The QMTs are based in provincial towns and rove from one clearance site to another to conduct QA/QC functions. Each QMT is equipped with a pick-up vehicle, Global Positioning System (GPS), mine detector, demining kits, CMAS, monitoring forms, operators’ SOPs, guide on rating of non-conformities to enable them to perform their QA/QC functions effectively and consistently.

The QMTs are deployed throughout the country according to the scope of operations. In provinces where mine action activities are low, one QMT may cover many provinces. Whereas, in a province of high activity, one or two QMTs may cover that province. On average, one QMT can conduct two to three QA/QC visits per day depending on the travel distance from one site to another. The QA/QC visit can be announced or unannounced based on the decision of the QMT Leader. The QMTs use monitoring forms to record findings and refer to the ‘guide on rating of non-conformities’ to consistently rate the non-conformities identified and provide corrective action recommendations.

Based on historical findings and performance, the QMT would decide whether to conduct QA/QC of a certain team in a reduced, normal, or tightened manner. The reduced means the QMTs may visit the operator’s team once every two months, the normal means the QMTs may visit the team once per month, and the tightened means the QMTs may visit the team two times per month.

Immediately after the completion of the QA/QC, the QMT de briefs with the operator’s team leader on the findings and recommends corrective actions, as applicable. Some corrective actions can be
taken immediately, others would need some time to put in place depending on the nature of the recommendations. If an observed non-conformity is potentially life threatening (such as for example wrong practice that can potentially lead to injury and/or death is applied, lack of medical supplies on site, no vehicle to be used as ambulance on standby, etc.), the QMT has the authority to suspend on-site operations until the non-conformity is rectified.

Non-conformities identified by the QMTs are classified into three categories, namely, minor, major, and critical.

a) Minor non-conformity: less serious situations including, but not limited to:
   - Isolated instances of not meeting non-critical requirements.
   - Incorrect or missing pieces of non-critical information.
   - Problems where the consequences are limited to internal inefficiencies, but the people are not affected.

b) Major non-conformity: a serious situation usually associated with serious problems including, but not limited to:
   - A major element of the quality management system (QMS) (or other system subject to monitoring) is not being implemented.
   - Something that affects everything or everyone in the operating operator/element.
   - Significant problems may result if the non-conforming product (e.g., cleared land) is released to public use.
   - Problems carrying a significant risk to an organization, its people, or other interested parties.

c) Critical non-conformity: a critical non-conformity is a major non-conformity that additionally implies an immediate and significant safety, environmental and/or serious risk to any worker, visitor, authority, member of the public, other stakeholders/interested party, or the environment/infrastructure.

In general, the QMTs plan to visit every team once per month. Upon arrival, the QMT checks whether the previously agreed corrective actions have been implemented before performing the new QA/QC functions.
Operators conduct internal QA/QC, while the CMAA’s QMTs conduct QA/QC externally.

Lessons Learned

QA/QC plays an indispensable role in ensuring mine action activities are safe, effective, efficient and in compliance with the requirements of the CMAS and to identify and address any potential shortcomings immediately.

As such, adequate financial, logistical, and political support is required to ensure that the QMTs perform their QA/QC functions effectively. This includes ensuring timely access to minefields and the respect of all parties of their role within the system value chain, whether it be oversight, implementation, or compliance.

Conclusion

CMAS set the requirements for mine action operators to develop their SOPs. The QA/QC process plays an important role in the quality management system for ensuring clearance and land release requirements are fulfilled. It provides confidence to the public, development partners, national authorities, operators, and stakeholders that quality requirements have been met. The QMTs must perform their functions independently and professionally to ensure safety of the operators on the ground, effectiveness and efficiency of the mine action procedures, and the quality of products (cleared land) and services guaranteeing that they meet the expected standards. It is important that the QMTs have the required support, financially, logistically, and politically, for them to work effectively and efficiently, and to ensure human security and success of clearance operations.
References

- Decree No. 160 on establishment of the Cambodian Mine Action and Victim Assistance Authority (CMAA).
- Cambodian Mine Action Standards
- Guide on rating of non-conformities

UNDP Cambodia has been the proud partner of the Royal Government of Cambodia (RGC) supporting the mine action sector since 2006. Currently in its fourth phase, the multi-donor flagship project Clearing for Results (CfRIV): Mine Action for Human Development (2020-2025) aims to accelerate reaching the Cambodia Sustainable Development Goal No. 18 to “End the negative impact of mines/ERW and promote victim assistance” and to achieve the Kingdom’s goal for a mine free Cambodia by 2025. CfRIV is funded by Australia, the Republic of Korea, New Zealand, UNDP and the RGC.