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Cluster Munition Remnant Survey in Southeast Asia

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CLUSTER MUNITION REMNANT SURVEY IN SOUTHEAST ASIA

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[Norwegian People's Aid]

Cluster munitions in Laos.
All figures courtesy of NPA.

Efficient and effective land release is a core global priority for MAG (Mines Advisory Group), Norwegian People's Aid (NPA), and The HALO Trust (HALO), as significant and ongoing investment of resources and expertise continually improve procedures and approaches. *Cluster Munitions Remnants Survey: Best Practice in South East Asia* is the result of many years of close cooperation between MAG, NPA, and HALO on survey and clearance of cluster munition remnants (CMR) in Cambodia, Laos, and Vietnam. Ahead of the 9th Meeting of States Party (9MSP) to the *Convention on Cluster Munitions* (CCM), held in Geneva in September 2019, operational and programmatic staff from the three organizations met to discuss key lessons learned during twelve years of surveying cluster munitions in Southeast Asia. The identified lessons and agreed best practice were summarized in a joint publication that was also presented at a side event during the 9MSP in Geneva attended by government delegates, national mine action authorities, international mine action and U.N. organizations, and civil society. The publication and side event were generously funded by the Government of the United States.

THE SOUTHEAST ASIAN CONTEXT

Within Cambodia, Laos, and Vietnam (hereinafter referred to as Southeast Asia), there is predominant, long-standing contamination from CMR. This contamination has some defining characteristics that present a specific context for operators to address. CMR found

in Southeast Asia are typically BLU-type munitions between forty and sixty-five years old, with a detonation failure rate of up to 30 percent. Combined with the density of the bombing, this high failure rate has resulted in dense, surface-level contamination from aged munitions. The presence of munitions over many decades has also led to large amounts of historic data released to support clearance efforts, including accident data, information from previous tasks, and bombing data.

This context requires an evidence-based survey response based on a comprehensive desk assessment to consider all available historic data, a thorough Non-Technical Survey (NTS) to ensure all evidence is identified, and a Technical Survey (TS) targeted only where actual evidence is identified, not feared or suspected. Combined, these steps are referred to as Cluster Munition Remnants Survey (CMRS).

DEVELOPMENT OF CMRS IN SOUTHEAST ASIA

Based on operational experience, and the shared belief that a well-managed, locally-adapted response should be used to target survey and clearance of cluster munitions, MAG, NPA, and HALO have worked closely on the development of CMRS.

The first cluster munition survey operations were conducted by NPA in Southeast Asia in 2008. Much of the thinking that informed the designs of earlier surveys was based on addressing landmine contamination; however, lessons could be learned from cluster munition survey and clearance in Lebanon in 2006, South Sudan in 2005, and as far back as Kosovo in the late 1990s. Risk assessments quickly identified that the nature of the threat was significantly different from landmines, most notably in that teams could freely walk on the ground in areas with suspected contamination from CMR. As such, NPA's explosive ordnance disposal (EOD) teams in Vietnam conducted random TS in any direction from an identified CMR as early as 2008 and, parallel to this, NPA's Lao PDR programme was using full battle area clearance (BAC) teams to conduct similarly random searches using CMR as a starting point. This resulted in a slow and unsystematic search that did not provide the accuracy required for effective land release. Random TS did not sufficiently capture all available evidence and was unable to estimate the scope of contamination reliably. Clearance was still response-based, which resulted in huge inefficiencies in resource use as teams revisited villages multiple times. The need for a systematic, evidence-based survey was clear, and CMRS was developed progressively through multiple stages over many years. Previous versions used lessons learned to incrementally improve the accuracy of the methodology. Progress through various stages is detailed further in the Geneva International Centre for Humanitarian Demining's (GICHD) study, *A Study of Land Release in Quảng Trị Province*.

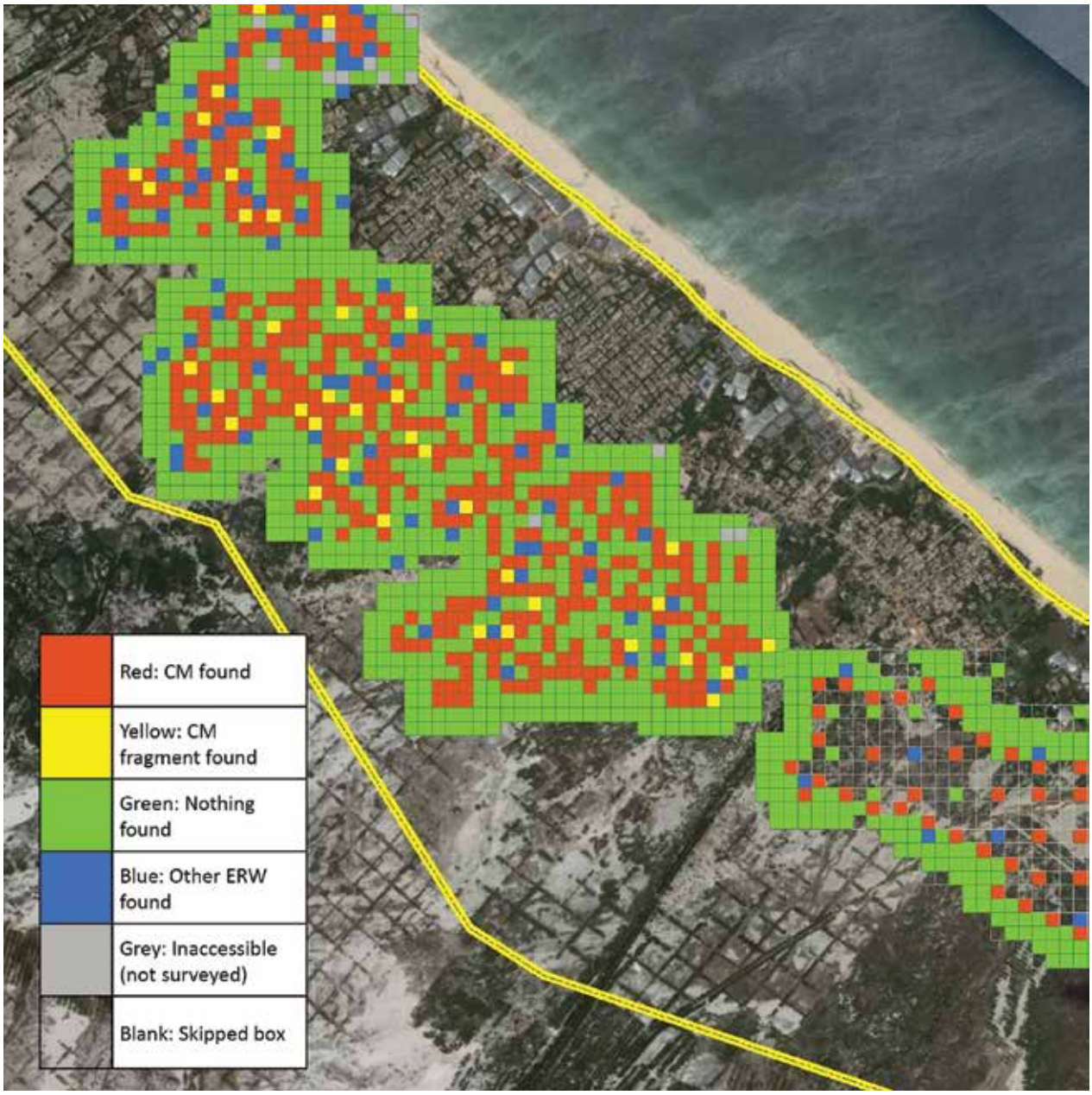
Variations in country contexts and operating environments mean that defining a universal CMRS methodology is not possible. However, by recognizing what constitutes best practice, operators and other stakeholders can work to ensure that, where implemented, CMRS adheres to an agreed set of base criteria and principles. This best practice is summarized in the following section.[1]

NPA personnel conducts TS. By sharing successes and challenges, the CMRS process can be incrementally improved to deliver more accurate results and more efficient clearance operations.

OVERVIEW OF BEST PRACTICES IN CMRS

CMRS is defined as the application of all reasonable effort through NTS and TS procedures, to identify and define a confirmed hazardous area (CHA) from CMR contamination. The key output of CMRS is a defined boundary of a CHA based on direct evidence of CMR contamination, which will be used to support planning for and prioritization of future BAC activities.

NTS is the application of all reasonable effort used to collect information in order to identify direct evidence of contamination. NTS, as a part of CMRS, should always include a thorough desk assessment of all available data including bombing data, historical operational, and accident data as well as any other relevant information (including development plans and data from commercial or military operators) prior to field deployment. Bombing data from the United States Air Force (USAF) should not be used as direct evidence due to the inaccuracy and methodology of recording this data; however, USAF bombing data can be used to inform operators as to the type and number of munitions that may be present in the area. NTS should be ongoing throughout the survey process, allowing teams to swiftly change activities depending on the situation and information they are investigating. NTS can also be conducted alongside



Red boxes indicate a cluster munition found, yellow boxes cluster munition fragments, green boxes nothing found, blue boxes the presence of other ERW.

TS over a longer period of time, which allows teams to make continued, informed assessments of results. Socioeconomic and impact data collected throughout the CMRS process and confirmed during end-of-survey assessments provides the necessary data to help prioritize CHAs during clearance.

To ensure correct, up-to-date information is acted upon in one continuous process, TS should begin as soon as possible following the completion of NTS and should be inducted using a system of boxes based on a 1 km by 1 km grid map. The standard TS search box is 50 m by 50 m for a total of 2,500 m^2, and each search box has a unique identification number. The search pattern within each box may vary, depending on vegetation cover, topography, detectors being used, and soil mineral content; however, it should be systematic in approach and implemented to ensure that a minimum of 50 percent of the box will be covered. When the search is complete, the box is color-coded, based on the colors in Figure 1, to map the presence of CMR. If a CMR is found, the search in that box will stop, and the box will be marked red on the map. The team will then move on to a new designated box.

Boxes may be "skipped" in areas of dense contamination. In some areas of Southeast Asia, cluster munition strikes are so dense that strike footprints overlap, creating CHAs that are millions of square meters in size. This can result in a large number of red boxes, particularly toward the center of a CHA. As such, one or more boxes can be

skipped so the boundary of the CHA is identified with less survey effort inside the footprint. This is a significant advantage to the CMRS methodology that drastically reduces the time and effort spent on survey inside contaminated areas, which require clearance and more accurately estimates for the amount of clearance required.

CMRS should be carried out by specially-trained or multi-skilled teams, with appropriate tools and experience. The teams take responsibility for all activities associated with the task of clearance, including desk assessments, community liaison, TS and NTS, EOD, and impact assessment. The confidence and experience of the operational team is critical to the implementation of CMRS. A team leader must have the training and resources available to make confident decisions and recommendations at each step.

A key element of CMRS is applying all reasonable effort to gathering information on the presence and impact of CMR from key informants within villages. Teams should spend sufficient time in a village to support the development of stronger rapport and trust between team and community members. This encourages more open sharing of information on the location and impact of CMR. Teams should also be able to conduct demolitions, to encourage more active information sharing by affected community members, who will see their information directly informing operations.

Cooperation between all stakeholders and a transparent information management system are essential to the availability and accessibility of information.

Ultimately, the survey and clearance of CMR should be based on continued threat assessment, evidence-based decision-making processes, ongoing quality assurance through verification of decision making, and close coordination with all stakeholders. CMRS is considered complete when an end-of-survey report is accepted by the national mine action authority.

CMR CLEARANCE

CHA boundaries based on direct evidence will ultimately result in a better-prioritized, more-efficient clearance process. Clearance remains the best means of ensuring quality control of the CMRS process and accuracy of the CHA polygon produced. After analyzing the results of clearance activities, CMRS procedures may be adjusted if results do not provide sufficient or accurate information to the clearance team. The feedback loop between clearance and CMRS is critical to avoiding under- or over-estimating the size of the CHA, and to verifying the accuracy and quality of survey results. For this feedback loop to be effective, clearance should be conducted as soon as possible after CMRS.

The close operational partnership between NPA and MAG in Quảng Trị Province, Vietnam, is an excellent example of this best practice. In Quảng Trị, NPA survey teams create CHAs that are cleared by MAG BAC teams. MAG and NPA routinely share all operational data and regularly conduct joint analysis to identify areas of improvement in the methodology. Through this partnership, operators were able to confirm that the boundary of the CHAs produced during CMRS were accurate and could be used to inform planning and prioritize clearance resources.

WHAT COMES NEXT?

All three NGOs are seeking to further develop the CMRS methodology by trialing changes in its implementation. Examples of ongoing trials include investigations into the optimal team size,

utilization of new animal and mechanical detection assets, improved digital reporting procedures, and desktop mapping of evidence points to create an initial CHA boundary.

Continued collaboration, discussion, and sharing of lessons learned is critical to support the most effective and efficient adherence to CCM obligations and to increase the safety and socioeconomic development of cluster munition-affected communities in Cambodia, Laos, and Vietnam. MAG, NPA, and HALO will continue their close partnership in Southeast Asia and will seek to update the CMRS best practices document to reflect improvements to operational efficiency.

Involvement of stakeholders outside of the MAG-NPA-HALO partnership is of fundamental importance to the application and improvement of CMRS. Bringing together national and provincial authorities, other survey and clearance operators, and the donor community to discuss the best implementation of cluster munition survey and clearance in the region is critical for promoting its robust implementation, fostering strong national ownership, and ensuring the continual refinement of methodologies. This was most recently facilitated by the Government of the United States, which brought seventy-one stakeholders from Southeast Asia and further afield together in Quảng Trị Province, Vietnam, at the Second Regional Workshop on Cluster Munition Remnants Survey. At this workshop, the focus was to document best practices in CMRS in Southeast Asia as well as develop concrete plans of actions for each of the three countries. This workshop was a follow-up to the first, which was organized in June 2017, also funded by the Government of United States. Moreover, early donor support from the United States and Norway was key for NPA's efforts us to be able to develop CMRS.

CMRS methodology draws from the International Mine Action Standards (IMAS) and internationally agreed mine action principles to enable the most effective application of land release in a cluster munition context. However, CMRS is not currently included as a specific standard or Technical Note (TN) in IMAS and is instead covered under the general principles of IMAS and across several standards. This is primarily due to the development of IMAS being based on a landmine contamination context, and the significantly different nature of the threat being addressed in Southeast Asia. All operators work with national authorities to ensure National Mine Action Standards (NMAS) in Southeast Asia adhere to IMAS as closely as possible, and encourage NMAS to outline and define key requirements specific to CMRS. At the same time, MAG, NPA, and HALO believe that there is scope for IMAS to be revised to provide stronger standards for the implementation of CMRS in Southeast Asia and as such, a TN for mine action is being prepared to suggest revisions to the current IMAS, and will be submitted to the IMAS Review Board with a view for formal adoption.

Finally, it is important to consider CMRS methodology in different and emerging contexts. There is strong indication that CMRS methodology may have application in other locations with heavy cluster munition contamination, including southern Iraq and southern Lebanon. Areas with dense, surface-level contamination from CMR will likely require a systematic, evidence-based survey response based on the identification of CHA boundaries instead of single items to provide a basis for informed clearance. By sharing successes and challenges in implementation and discussing lessons learned, the CMRS process has, and will continue to be, incrementally improved to deliver more accurate results and provide a basis for more effective and efficient clearance operations.

See endnotes page 59

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Kimberley McCosker worked for three years with NPA in Lao PDR as Programme Coordinator and Project Manager, supporting the implementation of cluster munition remnants survey and clearance projects in six provinces. Prior to joining NPA, McCosker worked as Programme Manager for Handicap International in Cambodia and as a freelance photojournalist. McCosker holds a Bachelor of Photography from Griffith University's Queensland College of Art and a Bachelor of Journalism from Queensland University of Technology.

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From 1989 to 2000, Jan Erik Støa attended military schools and served in the Norwegian Army. During the service as officer, Støa participated in different UN missions in Bosnia, Kosovo, and Lebanon, Somalia. Following retirement, Støa worked for two years with the Norwegian Refugee Council and was seconded to UNICEF in Sierra Leone and UNHCR in Eritrea. In 2002, Støa started work for Norwegian Peoples Aid (NPA) in the NPA head office. He has also worked on short contracts for DCA and FSD. In NPA, Støa has worked for two years as desk officer and he has also spend time in different field positions, from technical advisor, senior advisor, operations manager, program manager, and country director.

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After first joining NPA in 2013, Katherine (Katie) Harrison took on the position of Programme Coordinator with the NPA Lao PDR team in January 2020. Harrison formerly served as Senior Policy and Research Advisor with NPA, where she was the primary researcher and author of numerous country reports for NPA's Mine Action Review publications 'Clearing the Mines' and 'Clearing the Cluster Munition Remnant's. Since 2006, she has worked on a range of mine action and humanitarian disarmament initiatives, including with organisations Action on Armed Violence, Landmine Action, and the Women's International League for Peace and Freedom. She holds a Master's (with distinction) in Diplomacy and International Strategy from the London School of Economics and Political Science, and a Bachelor's (with honours) from the University of Chicago in Political Science.