Conclusion
Submissions are different from mines and other ERW in a number of ways. Because of these unique characteristics, it is an advantage to develop a unique land-release methodology for the survey and clearance of submunitions so that the most efficient approach is used.

Although some mine-clearance procedures are also suitable for submunition survey and clearance, it is important that more efficient procedures specifically tailored to cluster-munitions identification and removal, including establishing the submunitions footprint, are used when possible. See endnote page 82.

NPA’s Survey and Clearance of Cluster Munitions Along the Thailand-Cambodia Border

The February conflict at the Thailand-Cambodia border over disputed territory has left Cambodia with the burden of clearing cluster munitions. By applying to the Thai-Cambodian conflict strategies for cluster munitions removal that were successful in other post-conflict areas, NPA is assisting the Cambodian Mine Action Centre in cleaning up the problem. Thailand and Cambodia have not acceded to the ban on cluster munitions established in the 2008 Convention on Cluster Munitions and are therefore not subject to its provisions. Both countries attended the CCM 2011 intersessional meeting in June, leaving many hopeful that the two countries will become States Parties.

Thailand and Cambodian troops exchanged fire 4–7 February 2011 over disputed territory along the border near the Preah Vihear temple in northern Cambodia, a UNESCO World Heritage site. On 10 February, the Cambodian Mine Action Centre reported it had evidence that Thai forces fired cluster munitions into areas in Preah Vihear province.

Funded by the Norwegian Ministry of Foreign Affairs, Norwegian People’s Aid began a new survey project in Cambodia in 2011 to establish the extent of the cluster-munition remnants problem across the country using methodologies developed through NPA’s work in Laos, Lebanon, Serbia and Vietnam. CMAC asked NPA to conduct an emergency survey of the affected areas. Simultaneously, in Thailand, in cooperation with the Thailand Mine Action Center, NPA conducted a survey of the sites on the Thai border that were attacked with Cambodian artillery during the February conflict.

Neither Thailand nor Cambodia has acceded to the Convention on Cluster Munitions, but positive statements by both nations during the CCM’s first intersessional meetings offered hope that they would join the CCM soon. Follow-up meetings in Cambodia and Thailand in mid-August 2011 included military-to-military dialogue on the obligations of the CCM and alternative, more cost-efficient ways to destroy cluster-munition stockpiles.

Assessment of the Situation
On 1 and 2 April 2011, a delegation from NPA, CMAC and the Landmine and Cluster Munition Monitor visited Cambodia’s affected areas. The objectives of the assessment were to confirm cluster-munition use in Preah Vihear province (number of sites contaminated/types of munitions used) and to assess the impact of cluster-munition contamination on the population. In Sen Chey village the assessment team found that cluster munitions had hit several houses and people were living among the unexploded submunitions.

The assessment team recorded the locations of all unexploded munitions found, and evidence from cluster-munition strikes was gathered (spaces/ribbons, fragments, etc.). It was confirmed that Thailand delivered the cluster munitions by artillery, namely the 155mm NR 269. The assessment also determined that unexploded M43/M46 contaminated the area.
CMAC identified 12 cluster-bomb-unit strike sites, and the initial priority recommended by the assessment team was to conduct a rapid but systematic survey of the contaminated areas through visual instrument-aided inspection. Based on the assessment, CMAC requested NPA to provide technical support and use the survey teams for future battle-area clearance of the contaminated areas. While the land has yet to be cleared, CMAC has used the NPA survey to restrict the contaminated area and conduct mine-risk education for the local people. No accidents have occurred since.

**Deployment of NPA/CMAC Teams**

Upon agreeing to assist CMAC, NPA contracted a technical advisor to supervise the training and deployment of survey management staff, the four survey teams and one explosive-ordnance-disposal team to Preah Vihear province.

The teams conducted appropriate training on IAC operational procedures, provided instruction on technical aspects of cluster munitions in particular, and deployed to the area 1 May 2011. The teams were deployed to three high-priority areas and between 1 May and 13 June 2011 cleared the following areas:

1. Sen Chay village: 117,500 square meters (29 acres)
2. Thomcheat resettlement village: 305,000 sq. m (75 acres)
3. Area 911: 497,601 sq. m (123 acres)

The total area the NPA/CMAC teams cleared was 920,101 sq. m. (227 acres). The methodology of the clearance operations was based on the NPA standard operating procedures from Lebanon, and the teams used the Minelab F3 metal detector for all visual instrument-aided surface searches. The performance of the teams was excellent, as observed from the productivity figures. NPA transferred procedures and knowledge on cluster-munitions clearance to CMAC management staff and its EOD team. The clearance of the remaining contaminated areas in Preah Vihear was continued from 1 July 2011 by other CMAC clearance-capacity resources.

**Lessons Learned**

The clearance of cluster-munition remnants, including unexploded submunitions, is not in and of itself particularly difficult, and many international organizations have cleared various explosive remnants of war. However, the knowledge of the threat expected is important. Normally, the threat picture in Southeast Asia would consist of slightly less dangerous submunitions (like the BLU-26, BLU-3 B and BLU-24 B), but in the case described above, survey teams found the newer and more dangerous M85 type submunition, which changed the way the SOPs for clearance were developed. Unexploded M85 SD submunitions with self-destruction mechanism were found armed and not detonated.

Good surveying of cluster-munition remnants is potentially more efficient than is the case with, for example, landmines, as more and often better quality data is available up front (bombing data coordinates, numbers and types of ordnance used). The Cluster Munition Coalition called on Thailand to release data on target coordinates and numbers of explosive remnants of war. However, the knowledge of the threat expected is important. Normally, the threat picture in Southeast Asia would consist of slightly less dangerous submunitions (like the BLU-26, BLU-3 B and BLU-24 B), but in the case described above, survey teams found the newer and more dangerous M85 type submunition, which changed the way the SOPs for clearance were developed. Unexploded M85 SD submunitions with self-destruction mechanism were found armed and not detonated. 

**Table 1. (Clusters per task) Items of cluster munitions found in Cambodia during survey.**

<table>
<thead>
<tr>
<th>Items/TASK</th>
<th>Sen Chay</th>
<th>Thomcheat</th>
<th>Area 911</th>
<th>Spot tasks</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAG</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>1</td>
<td>15</td>
</tr>
<tr>
<td>MAG</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>M85 SD</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>1</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>21</td>
</tr>
</tbody>
</table>

**Table 1. (Clusters per task) Items of cluster munitions found in Cambodia during survey.**

Atle Karlsen is the Country Director for Norwegian People’s Aid in Lao PDR, he also worked as Regional Director for NPA in Southern Africa, based in Mozambique. Since 2009, Karlsen has worked as Policy Advisor to NPA, representing NPA on the International Campaign to Ban Landmines and the CCM. Karlsen holds a master’s degree in development economics from the University of East Anglia, U.K. and another master’s degree in international management from the BI Norwegian School of Business Management, Oslo, Norway. He is a member of the editorial board of the Landmine and Cluster Munition Monitor, and has worked on strategies, results management and quality assurance for NPA for the last 10 years.

Atle Karlsen
Country Director/Policy Advisor
Norwegian People’s Aid
Tel: +856 207 744 7000
Skype: atlebruce
Email: atlek@npaid.org
Website: http://npaid.org