

**ARTICLE 5 DEADLINE: 31 DECEMBER 2025**  
**NOT ON TRACK TO MEET DEADLINE**

## KEY DATA

**ANTI-PERSONNEL (AP) MINE CONTAMINATION: MASSIVE**

MINE ACTION REVIEW ESTIMATE

**400 KM<sup>2</sup>**

AP MINE CLEARANCE IN 2020

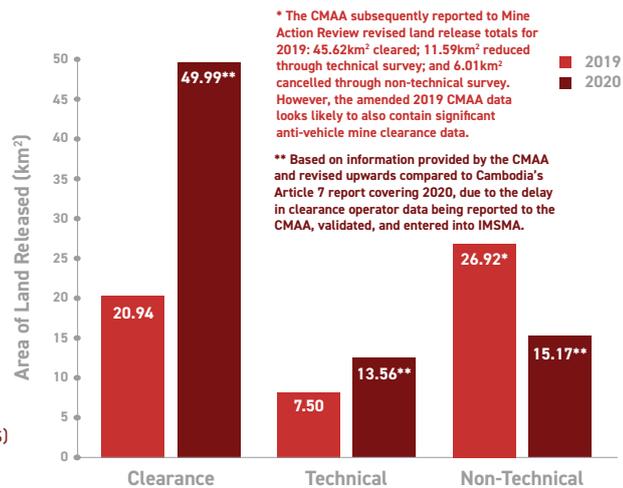
**49.99 KM<sup>2</sup>**

AP MINES DESTROYED IN 2020

**17,957**

(INCLUDING 6,394 IN SPOT TASKS)

## LAND RELEASE OUTPUT



**CURRENT LIKELIHOOD OF MEETING 2025 CLEARANCE TARGET (as per the Oslo Action Plan commitment): LOW**

## KEY DEVELOPMENTS

Cambodia continues to make progress in planning, prioritisation, and land release of mined areas, with clearance and technical survey output double that of the previous year, despite the impact of COVID-19. However, Cambodia has not been able to secure the additional funding and significantly increased clearance capacity planned for in its 2019 Article 5 extension request, and it is therefore not on track to complete anti-personnel mine clearance by 2025.

Furthermore, significant amounts of previously unrecorded suspected mined areas were added to the database in 2020, including as part of the baseline re-survey (BLS), but there remain concerns as to the extent to which new areas entered into the database are evidence-based.

## RECOMMENDATIONS FOR ACTION

- The Cambodian Mine Action and Victim Assistance Authority (CMAA) should prioritise funding for quality assurance (QA) capacity in order to increase the number of QA teams and train them to monitor survey activities of operators across the sector, including ensuring that all survey is evidence-based; that cancellation and/or reclassification of mined area is applied wherever appropriate; and that new, previously unrecorded mined areas are verified before entry onto the national database.
- The CMAA should continue its efforts, through projects such as the data verification project, to attempt to identify non-evidence-based and inaccurate survey data included in the Information Management System for Mine Action (IMSMA) database and should discuss the possibility of cancelling them via desk analysis.
- Cambodia should continue to improve its information management systems by eliminating discrepancies with operator data and ensuring synchronisation of reporting.
- The CMAA should also seek to develop more cost-efficient land release methods to deal with low-density mined areas. Linked to this, the CMAA should review the Cambodian Mine Action Standards (CMAS) to determine whether the criteria for cancellation and reclamation of mined areas can be strengthened.

- The CMAA should establish a clear timeframe and resource mobilisation strategy for equipping, training, and deployment of the proposed 2,000 additional deminers from the Cambodian Armed Forces. The CMAA could also consider upscaling the number of deminers through other national entities, such as Cambodian Mine Action Centre (CMAC).
- Cambodia should commence the next clearance task as part of the pilot border clearance project with Thailand, as soon as the COVID-19 situation permits, and should seek to conclude a bilateral cooperation mechanism that would enable both countries to survey and clear all mined areas along the shared border.
- Cambodia should finalise the new Gender Mainstreaming in Mine Action Plan (GMAP) for 2021–25, which will replace the existing GMAP 2018–22, and provide regular progress updates on implementation of the plan.
- The CMAA should ensure that Mine Action Planning Units (MAPUs) work closely with the local communities, to help ensure that elaboration of annual work plans is well informed, focusing on contaminated areas requiring clearance and identifying those mined areas that can be cancelled through non-technical survey rather than released through clearance.

## ASSESSMENT OF NATIONAL PROGRAMME PERFORMANCE

Criterion	Score (2020)	Score (2019)	Performance Commentary
<b>UNDERSTANDING OF CONTAMINATION</b> (20% of overall score)	7	7	The baseline re-survey (BLS), which has resulted in significant cancellation of uncontaminated land and release of reclaimed land, is progressing well and is expected to be completed in 2023. At present, it excludes the mined areas on Cambodia's border with Thailand. Some polygons identified through the BLS will require further investigation to confirm that mines are actually present. This is believed to be the case too for many of the newly discovered suspected mined areas entered into the database in 2020, some of which are believed to lack direct evidence. While the BLS classifies the type of mine contamination (e.g. anti-personnel or anti-vehicle) based on Cambodia's classification system, it only classifies mined areas as suspected hazardous area (SHA) instead of disaggregating into confirmed hazardous area (CHA) and SHA in line with international best practice.
<b>NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT</b> (10% of overall score)	8	8	There is strong national ownership of mine action in Cambodia and an enabling environment for mine action, with good oversight from the CMAA. There is a Technical Working Group on Mine Action (TWG-MA), which brings all stakeholders together, as well as a Mine Action Coordination Committee (MACC) and seven Technical Reference Groups (TRGs), including one on survey and clearance. The Cambodian government contributes to mine action and is seeking additional international assistance to help fund deployment of additional deminers from the Royal Cambodian Army.
<b>GENDER AND DIVERSITY</b> (10% of overall score)	8	8	Cambodia has in place a Gender Mainstreaming in Mine Action Plan (GMAP) 2018–22, which is embedded in both its National Mine Action Strategy 2018–25 and implementation plan 2021–23. In 2020, trainings were provided to Mine Action Planning Units (MAPUs) and quality management team (QMT) staff on the new guidelines for gender mainstreaming, as well as on implementation of the GMAP 2018–22, and on data disaggregated by sex and age (SADD). As at July 2021, a new GMAP 2021–25 had been drafted to supersede the GMAP 2018–22, and was awaiting final consultation and approval. The CMAA also has a Gender Mainstreaming Team (GMT) that was established to coordinate with the technical reference group on gender (TRG-G), one of five TRGs ensuring coordination of the sector.
<b>INFORMATION MANAGEMENT AND REPORTING</b> (10% of overall score)	7	7	Strengthening information management is one of the goals of Cambodia's national mine action strategy and the CMAA has made continued improvements in recent years, setting up a virtual private network (VPN) to allow operators to input directly into the database. Regular TRG meetings organised by the CMAA database unit (DBU) and held with operators continued throughout 2020, to discuss challenges, lessons learnt, and areas of improvement. They also allowed for reconciliation of data and the updating of IMSMA. The CMAA's DBU is working on data migration to IMSMA Core. CMAC, with support from NPA, finished uploading 8,381 backlogged CMAC records from explosive ordnance disposal (EOD) spot tasks onto the national database in 2020. However, there are concerns that unverified mined areas, which lack direct evidence of mine contamination, are being entered into the IMSMA database.

Criterion	Score (2020)	Score (2019)	Performance Commentary
<b>PLANNING AND TASKING</b> (10% of overall score)	7	7	Cambodia has a comprehensive National Mine Action Strategy 2018–25 and a detailed three-year implementation plan 2021–23. The CMAA detailed updated annual clearance targets in its 2019 extension request, but these were calculated based on an additional 2,000 deminers, which have yet to be secured. Cambodia has clear criteria and processes for the prioritisation of tasks, involving consultation with key stakeholders.
<b>LAND RELEASE SYSTEM</b> (20% of overall score)	6	7	Cambodia's mine action standards (CMAS) are broadly consistent with the International Mine Action Standards (IMAS). However, the CMAA needs to ensure new and existing mined areas entered into the IMSMA database contain mines, and that areas with no evidence of mines are cancelled or reclaimed. This requires strengthened quality management for new areas and re-survey of existing areas on the database that lack evidence of mines.
<b>LAND RELEASE OUTPUTS AND ARTICLE 5 COMPLIANCE</b> (20% of overall score)	7	6	Clearance output in Cambodia in 2020 was a huge (138%) increase on the previous year, however the 2019 total may in fact have been underreported, according to revised 2019 clearance data provided by the CMAA to Mine Action Review in 2021, although the amended 2019 data looks likely to also contain significant anti-vehicle mine clearance data. While a total of 78.7km <sup>2</sup> was released through survey and clearance in 2020, 74.8km <sup>2</sup> of newly discovered suspected mined area was also added to the database. Cambodia's annual land release targets are extremely ambitious, and are not being met. The targets will only be possible with significant additional funding and demining capacity along with successful coordination with Thailand to address all mined areas along the border, including those in areas with unclear border demarcation.
<b>Average Score</b>	<b>7.0</b>	<b>7.0</b>	<b>Overall Programme Performance: GOOD</b>

## DEMINING CAPACITY

### MANAGEMENT CAPACITY

- Cambodian Mine Action and Victim Assistance Authority (CMAA)

### NATIONAL OPERATORS

- Cambodian Mine Action Centre (CMAC)
- Cambodian Self-help Demining (CSHD)
- National Centre for Peacekeeping Forces Management, Mines and Explosive Remnants of War Clearance (NPMEC)

### INTERNATIONAL OPERATORS

- APOPO
- The HALO Trust
- Mines Advisory Group (MAG)

### OTHER ACTORS

- United Nations Development Programme (UNDP)
- Geneva International Centre for Humanitarian Demining (GICHD)
- Norwegian People's Aid (NPA)

## UNDERSTANDING OF AP MINE CONTAMINATION

As at December 2020, Cambodia estimated anti-personnel mine contamination at nearly 801km<sup>2</sup> across 8,923 suspected hazardous areas (SHAs) (see Table 1).<sup>1</sup> This is a reduction compared to December 2019, when contamination stood at over 817km<sup>2</sup> across 9,539 suspected SHAs.<sup>2</sup> Significant reductions in the baseline of mined area, through land release operations, are being largely offset by large quantities of newly discovered suspected mined areas being added to the database (see the Newly discovered mined areas section below).

The CMAA, which oversees the mine action database, operates its own classification system for anti-personnel (AP) mined area that disaggregates and categorises land as containing: A1 (dense concentration of AP mines); A2-1 (mixed dense AP + AV [anti-vehicle] mines); A2-2 (mixed scattered AP + AV mines); A3 (AV mines); and A4 (scattered or nuisance AP mines).<sup>3</sup>

Since the start of the original BLS in 2009, the CMAA has only recorded mined areas as SHAs, and not disaggregated between confirmed hazardous areas (CHAs) and SHAs in line with best practice.<sup>4</sup> The CMAA planned to migrate CHA data resulting from the ongoing cluster munition remnant survey (CMRS) process into its national database,<sup>5</sup> but had no plans to reclassify landmine data into CHAs and SHAs.<sup>6</sup> CHAs are only stored in the databases of some clearance operators.<sup>7</sup> In its decision on Cambodia's 2019 Extension Request, the Anti-Personnel Mine Ban Convention (APMBC) Committee on Article 5 Implementation highlighted "the importance of Cambodia reporting on its remaining challenge in a manner consistent with IMAS [International Mine Action Standards], namely disaggregating by suspect and confirmed hazardous area in order to ensure clarity regarding its remaining challenge."<sup>8</sup>

**Table 1: Anti-personnel mined area by province (at end 2020)<sup>a</sup>**

Province	Districts	SHAs	Area (m <sup>2</sup> )
Banteay Meanchey	9	2,080	137,704,330
Battambang	13	1,560	153,754,192
Kampong Cham	5	12	1,055,226
Kampong Chhnang	6	44	3,511,298
Kampong Speu	7	411	47,072,850
Kampong Thom	7	556	54,291,793
Kampot	7	137	12,486,197
Kandal	2	2	63,203
Kep	2	6	641,691
Koh Kong	6	360	23,933,698
Kratie	5	101	18,116,943
Mondul Kiri	5	62	8,399,249
Oddar Meanchey	5	980	97,550,917
Pailin	2	503	31,101,206
Phnom Penh	2	13	1,122,444
Preah Sihanouk	1	22	1,681,425
Preah Vihear	8	664	83,808,389
Prey Veng	1	1	5,900
Pursat	5	504	43,265,479
Ratanak Kiri	2	20	2,690,487
Siem Reap	12	729	65,557,216
Svay Rieng	5	93	9,382,708
Takeo	1	55	3,626,856
Tboung Khmum	2	8	817,955
<b>Totals</b>	<b>120</b>	<b>8,923</b>	<b>801,641,652</b>

The original baseline survey (BLS) of all explosive ordnance (EO) contamination, including mines, cluster munition remnants (CMR), and other explosive remnants of war (ERW), was conducted between 2009 and 2012 across 124 districts. The CMAA and demining operators acknowledge that the BLS data are imprecise, with contamination being found outside BLS polygons and substantial areas identified by the BLS now under cultivation.<sup>10</sup> The CMAA analysed land release data and found that, on average, 32% of land classified as A1 and 51% of land classified as A4 had been reclaimed.<sup>11</sup> In 2015, the CMAA introduced the land reclamation non-technical survey and baseline survey (LRNTS+BLS) methodology, a stand-alone process to re-survey or re-verify SHAs identified during the original BLS. The on-going re-survey/re-verification efforts, have helped more accurately define the extent of remaining mine contamination and cancel those areas currently on the database that are found to have no evidence of mine contamination and/or which meet the CMAA criteria for reclamation. In 2015-18, the LRNTS+BLS led to release of more than 44.4km<sup>2</sup> of anti-personnel mined area across 1,076 SHAs.<sup>12</sup>

Fifty-three districts were re-surveyed as part of the BLS in 2019<sup>13</sup> and 15 districts (across eight provinces) in 2020.<sup>14</sup> The BLS had been expected to be completed by the end of 2020.<sup>15</sup> However, while all areas contaminated by CMR have now been re-surveyed as part of the BLS, re-survey of mined area is still ongoing and was not expected to be completed for mined areas until 2023. The CMAA has said the delay in completion of the BLS is due to three main reasons: a lack of key informants; inaccessible, restricted, and preservation areas; and the rainy season/flooded areas. Among the areas yet to be surveyed are minefields along the Cambodia-Thailand border, in particular areas with unclear border demarcation the estimated size of which has not been reported. As at May 2021, these border minefields remained inaccessible for survey and clearance operations,<sup>16</sup> and commencement of the next pilot project with Thailand had been impacted by the COVID-19 situation.

Some of the hazardous areas added to the database during the BLS are thought to be overestimated or lack evidence of mines. These will require further investigation through desktop survey and field data verification, but also in many cases through physical survey to confirm or disregard the existence and size of contamination.<sup>17</sup> The CMAA could also consider using updated satellite images to check which BLS polygons are already in use by communities, facilitating the CMAA to assign operators to investigate and cancel areas where there is no evidence of mines and helping gain a better picture of the remaining areas to be technically surveyed/cleared.<sup>18</sup> In a positive development, in December 2020 the CMAA initiated a 30-day pilot project known as “ground data verification”, supported by NPA, during which a selection of previously surveyed minefields were revisited to determine which areas could be cancelled or reclaimed and which were actual mined areas. Subject to funding, and the COVID-19 pandemic, the CMAA planned to expand the project to the most mine-affected districts in western Cambodia.<sup>19</sup>

Duplication in records of contaminated areas had resulted in a large amount of hazardous area being incorrectly recorded in the database, but the CMAA finished resolving this issue in 2020.<sup>20</sup> The CMAA database unit (DBU) conducted a desktop analysis using ArcMap to identify BLS polygons overlapped with completion polygons. As a result of the analysis, 158km<sup>2</sup> was removed from the national database.<sup>21</sup>

A data backlog of non-technical survey and land release forms pending quality control (QC) and approval by the CMAA, and also in part because of delayed handover and submission of forms by the operators, can impact how up to date contamination figures are.

## NEWLY DISCOVERED CONTAMINATION

In its 2018 Article 5 deadline extension request, Cambodia reported that the LRNTS+BLS had led to the identification of 1,363 SHAs of previously unrecorded anti-personnel mine contamination, covering a total area of almost 118km<sup>2</sup>.<sup>25</sup>

In 2020, a further 74.8km<sup>2</sup> of additional contamination across 432 SHAs in 15 districts was added to the national IMSMA database (see Table 2).<sup>26</sup> This is a significant increase on the 7.2km<sup>2</sup> over 117 SHAs of additional contamination identified the previous year.<sup>27</sup> According to the CMAA, incidents have occurred in some areas that were inaccessible during the previous survey or in areas where key informants were absent when the previous survey was conducted. This has resulted in the discovery of previously unknown contamination being added to the database, after verification by the CMAA QA and Database Unit (DBU) teams. Furthermore, economic development in Cambodia is gradually expanding into jungle areas, resulting in the discovery of new mine contamination.<sup>28</sup> The CMAA reported that it conducts QA of newly discovered mined areas, before they are entered into IMSMA.<sup>29</sup> However, a large proportion of new polygons surveyed are thought to have been established without direct evidence of contamination (i.e. suspected hazardous areas) and rarely yield mines when clearance teams are deployed on them. Poor survey is therefore contributing to an inflated representation of remaining contamination in Cambodia. The CMAA is said to be working to address this concern,<sup>30</sup> and planned to discuss it during the TRG meeting on clearance in October 2021.<sup>31</sup>

The current baseline of anti-personnel mine contamination has been established through inclusive consultation with women, girls, boys, and men, including, where relevant, from minority groups.<sup>22</sup>

Landslides caused by flooding in 2020 have unearthed mines and unexploded ordnance (UXO). According to online media reports, the provinces most affected by this phenomenon are Battambang, Banteay Meanchey, Kampong Thom, Kandal, Kratie, Mondul Kiri, Oddar Meanchey, Pailin, Pursat, Preah Vihear, Stung Treng, and Tboung Khmum.<sup>23</sup>

Cambodia has extensive contamination from mines and ERW left by 30 years of conflict that ended in the 1990s. It is estimated that four million anti-personnel mines were laid after the fall of the Khmer Rouge in 1979 until the end of the armed conflict in 1998. Cambodia's anti-personnel mine problem is concentrated in, but not limited to, 21 north-western districts along the border with Thailand, which account for the large majority of mine casualties. The K5 mine belt, which was installed along the border with Thailand in the mid 1980s in an effort to block infiltration by armed opposition groups, ranks among the densest mine contamination in the world.<sup>24</sup>

Cambodia also has significant contamination from CMR and other ERW (see Mine Action Review's *Clearing Cluster Munition Remnants* report on Cambodia for further information).

The CMAA's DBU is working with operators to investigate all newly added mine contamination.<sup>32</sup> The CMAA's Department of Regulation and Monitoring and its quality management (QM) teams (QMTs) have been tasked with an increased focus on BLS operations to ensure that previously unrecorded mined areas added to the national database are supported by strong and clear evidence and are of an appropriate size. In addition, the DBU will review newly captured mined areas and verification will be conducted by the QMTs on any questionable polygons.<sup>33</sup> International non-governmental organisation (NGO) operators fully support the CMAA deploying survey QA teams to verify hazardous areas before they are accepted onto the database.<sup>34</sup>

**Table 2: Newly added anti-personnel mined area in 2020<sup>35</sup>**

Province	Districts	SHAs	Area (m <sup>2</sup> )
Banteay Meanchey	1	1	119,630
Battambang	4	85	9,121,139
Kampong Cham	1	1	75,640
Oddar Meanchey	3	16	2,714,579
Pailin	2	102	10,391,074
Preah Vihear	2	210	51,540,330
Pursat	1	16	866,894
Siem Reap	1	1	15,228
<b>Totals</b>	<b>15</b>	<b>432</b>	<b>74,844,514</b>

## NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT

The CMAA was established by royal decree in 2000 with the mandate to regulate, monitor, and coordinate the mine action sector in Cambodia.<sup>36</sup> The CMAA has noticeably strengthened in recent years, and its roles and responsibilities have become more clearly defined.<sup>37</sup> CMAC, which was established in 1992, had previously been responsible for regulating and coordinating the sector in addition to undertaking clearance. Since 2000, CMAC's activities have been limited to conducting demining, risk education, and training.<sup>38</sup> CMAC conducts both humanitarian and commercial survey and clearance in Cambodia and is the country's largest mine action operator.<sup>39</sup>

Provincial Mine Action Committees (PMACs) and Mine Action Planning Units (MAPUs) were established in 2004, tasked with establishing clearance priorities in consultation with affected communities to ensure that clearance addresses their housing, agricultural, and infrastructure needs.<sup>40</sup> MAPUs meet regularly with all mine action operators to plan annual mine action activities.<sup>41</sup>

The Cambodian government established the Technical Working Group on Mine Action (TWG-MA) as a consultative mechanism between the government and implementing partners.<sup>42</sup> It meets on a bi-annual basis and is attended by the CMAA, relevant ministries, operators, and donors.<sup>43</sup> In 2020, however, TWG meetings were suspended due to COVID-19.<sup>44</sup> The Mine Action Coordination Committee (MACC) and seven Technical Reference Groups (TRGs) have been established by the CMAA to facilitate coordination and feedback at a strategic and technical level in areas such as survey and clearance, risk education, victim assistance, information management, gender, cluster munitions, and capacity development.<sup>45</sup> The TRG on survey and clearance meets on a quarterly basis,<sup>46</sup> but was only able to meet in Q1 and Q3 in 2020, due to COVID-19.<sup>47</sup>

The operating environment in Cambodia is permissive, with the Cambodian government open to the presence of international operators and supportive in administrative actions such as the granting of visas, approval of Memoranda of Understanding (MoUs), and importation procedures. The CMAA is open to the trialling and use of innovative clearance methods and tools to improve efficiency.<sup>48</sup>

The Geneva International Centre for Humanitarian Demining (GICHD), Norwegian People's Aid (NPA), and the UN Development Programme (UNDP) all support capacity development of the CMAA.

The GICHD provides information management and risk management support to the CMAA. In 2019, GICHD support to capacity development included stakeholder workshops on the IMSMA Core migration; initial development of the new database; support on developing residual capacity in line with Cambodia's mine action strategy; gender mainstreaming activities in mine action; and workshops on risk management and development of national mine action standards.<sup>49</sup>

NPA conducts capacity development activities in support of the CMAA on gender equity and mainstreaming, information management, knowledge management, planning and prioritisation, QM, and strategic planning.<sup>50</sup> NPA's capacity development work in Cambodia was previously part of a United Kingdom Foreign, Commonwealth & Development Office (FCDO, previously the Department for International Development (DFID))-funded partnership that includes Mines Advisory Group (MAG) and The HALO Trust, in addition to some financial support from Norway. As at July 2021, its work was supported solely by Norway.<sup>51</sup>

Since 2006, UNDP has been implementing its "Clearing for Results" (CfR) programme in Cambodia, relating to clearance of minefields in north-west Cambodia's most mine-affected provinces of Battambang, Banteay Meanchey, and Pailin. Aspects of the project relating to capacity development include supporting the establishment of a Performance Monitoring System (PMS) that links mine action's contribution to human development to mine action and strengthening the CMAA's international and national participation in relevant fora.<sup>52</sup> The third phase of the CfR programme was completed at the end of March 2020. The fourth phase (CfRIV) commenced in 2020 and runs until the end of 2025, focusing on release of mined areas in the most affected provinces through Land Reclamation Non-Technical Survey (LR-NTS) and clearance contracting, supporting victim assistance, mine risk education, gender mainstreaming, provision of development pathways in villages that are cleared of mines, strengthening capacity of the CMAA to lead the sector and support the development of national sustainable capacity to address residual threats.<sup>53</sup>

The Cambodian government contributes funding towards clearance and the management of the sector.<sup>54</sup> This support includes covering expenses of the CMAA and providing funds to support planning and prioritisation, QA/QC, database management, Cambodia mine/ERW victim information system (CMVIS), and risk education activities.<sup>55</sup> The cost of the database unit is, however, shared by NPA and UNDP.<sup>56</sup> The Cambodian government also provides a 10% in-kind contribution to any new donor funding, and a 10% in-cash contribution to the UNDP CfR programme.<sup>57</sup> Cambodia funds mine and ERW survey and clearance by CMAC and the National Centre for Peacekeeping Forces Management, Mines and Explosive Remnants of War Clearance (NPMEC).<sup>58</sup> Indirectly, tax exemptions on mine action equipment have contributed to humanitarian demining.<sup>59</sup>

The Cambodian government has reported contributing just under 30% of the total funding to the mine action sector (US\$99.49 million of US\$340.2 million) in 2010–18.<sup>60</sup> From 2020 to 2025, Cambodia requires an estimated overall budget of \$377 million, of which \$165 million is required to release anti-personnel mined areas. Cambodia is refining its resource mobilisation strategy to help promote fundraising and it intends to target past and current donors as well as engage with emerging and non-traditional donors. It is also seeking support from the private sector and philanthropists.<sup>61</sup>

## GENDER AND DIVERSITY

The CMAA has developed a Gender Mainstreaming in Mine Action Plan (GMAP 2018–2022), an objective of the National Mine Action Strategy 2018–2025, which consists of six goals. These include: the preparation of guidelines to aid gender mainstreaming across all mine action; capacity building of relevant stakeholders to implement the GMAP 2018–22; and the representation and participation of women in planning and prioritisation, risk education, and in mine action and advocacy at all levels. As at July 2021, a new GMAP 2021–25 had been drafted to supersede the GMAP 2018–22, and was due to be approved after the CMAA gender team had held a consultation meeting with operators and other relevant stakeholders.<sup>62</sup>

The latest National Mine Action Strategy three-year Implementation Plan (2021–23) sets out activities in support of these goals.<sup>63</sup> NPA, as part of its capacity development, is supporting the CMAA with training on gender mainstreaming in mine action, on implementation of the GMAP 2018–22 and the development of associated guidelines, and on how to use gender- and age-disaggregated data in planning and prioritisation processes.<sup>64</sup> Guidelines for Gender Mainstreaming in Mine Action were approved in December 2019. In 2020, trainings were provided to MAPU and QMT staff on the new guidelines, as well as on implementation of the GMAP 2018–22,<sup>65</sup> and on disaggregating data by sex and age (SADD).<sup>66</sup> Twenty-six data collection forms now need to be updated to fully roll out the collection of SADD. Further training is needed with the MAPUs, operators, and CMAA staff to ensure that the SADD is used for prioritisation and planning.<sup>67</sup> Furthermore, an assessment has been conducted on capacity, efficiency, and challenges of all demining operators and stakeholders in gender mainstreaming, in order to update GMAP 2018–22 to GMAP 2021–25.<sup>68</sup>

The GICHD conducted a gender and diversity baseline assessment of the CMAA in 2019 and has a joint action plan to support gender and diversity mainstreaming efforts for the remainder of the GMAP strategy period.<sup>69</sup>

A CMAA Gender Mainstreaming Team (GMT) was established to coordinate with the TRG on Gender (TRG-G), one of seven TRGs ensuring coordination of the sector. The TRG-G is composed of representatives from UNDP, Ministry of Women's Affairs (MoWA), Ministry of Social Affairs, Veterans and Youth Rehabilitation (MoSVY), MAPU, operators, and international and national organisations working in mine risk education (MRE) and victim assistance (VA).<sup>70</sup> Of the CMAA's 150 employees in 2020, 39 (26%) were female, with women in 15 of 71 (21%) managerial level positions and 13 of 44 (29%) supervisory positions.<sup>71</sup>

Survey and community liaison teams are said to be inclusive and mixed gender. Women are given access to job announcements and female candidates are given priority during the recruitment process. Women and children in affected communities are consulted during village meetings and community liaison activities, including regarding prioritisation. This commitment is reinforced by the demand for all reporting forms to have SADD and by the provision of training to MAPU and QMT staff.<sup>72</sup>

Support for increased and inclusive engagement of women and marginalised populations in the planning and prioritisation process was also demonstrated by the development and approval of a new "Village Meeting to Prioritize Minefields for Clearance (coordinated by Village

Chief)" guideline. Drafted with input from the CMAA SEPD (Socio-economic planning and database management) and Gender Team, the UNDP Clearing for Results project team, and MAPUs, the guidance aims to support village chiefs to undertake inclusive village consultations. These are due to be held before the commune meetings at which chiefs and other key village members present the mined and ERW-contaminated areas they want cleared as a priority.<sup>73</sup>

Of APOPO's 72 staff in Cambodia 23 (32%) are women, along with 5 of the 49 (10%) CMAC employed seconded to APOPO. Five of fourteen (36%) of APOPO's managerial/supervisory-level positions are held by women. With respect to operations staff, 19 of APOPO's 48 (39%) employees are women, along with 6 of the 27 (22%) CMAC operations staff seconded to APOPO.<sup>74</sup> APOPO disaggregates relevant mine action data by gender and age.<sup>75</sup>

As at April 2021, women made up 30% of Cambodian Self-help Demining (CSHD)'s workforce, with women in 5% of managerial/supervisory roles, and 33% of operations positions.<sup>76</sup>

CMAC's strategy addresses gender sensitivity in mine action and it is working to promote gender in its strategic goal. CMAC said this is achieved through promoting gender in mine action through policies and procedures, by providing equal opportunities for women to work at CMAC, nurturing a gender-friendly working environment, continuing to encourage the recruitment of women to management positions, and promoting gender mainstreaming in all CMAC's activities. CMAC also said its strategy considers social norms and promotes gender mainstreaming in a culturally sensitive fashion. CMAC ensures its mine action teams are gender-balanced, and an increasing number of women have been employed as deminers and in operational support positions in the field.<sup>77</sup>

At the beginning of 2020, CMAC recruited mostly women for vocational training (64 female trainees) and appointed a large number of women as team leaders, office workers, and as the chief of office.<sup>78</sup> CMAC, which operates under Cambodian labour law, is actively recruiting women with a view to reaching an aggregate of 15% women in its workforce. Women currently work across all levels of the organisation, including in managerial level/supervisory positions. Two of the six directors were women in 2020.<sup>79</sup> As at June 2021, there were 178 female staff at CMAC, which is 13% of CMAC's workforce. Of these, 23 women were in managerial/supervisory positions and 86 women were in operational positions.<sup>80</sup>

The HALO Trust provides equal job opportunities and 38% of its employees in Cambodia are women, including 43% of operational staff (50% of HALO deminers are women), and 18% of managerial level/supervisory positions across the programme (double the 9% reported the previous year). Due to low historical levels of women employed until recently, relatively few women have yet acquired the required experience and expertise (typically six to ten years) to take up managerial/supervisory roles in HALO's view. However, the proportion of women employed in senior roles is expected to increase considerably in the coming years as women gain more experience and rise up the junior ranks from deminer upwards. HALO deploys gender-balanced survey and clearance teams to help ensure it consults all groups of the local community.<sup>81</sup>

During non-technical survey and pre-clearance impact assessments, MAG deploys mixed-gender community liaison teams to gather information on the suspected location of mines and the impact on the community. Of MAG's total employees in Cambodia, 32% are women. In its survey and clearance teams, 29% of staff are women, as are 24% of managerial level/supervisory positions.<sup>82</sup> In Q4 2020, MAG secured funding to conduct a gender analysis of its programme, in order to promote meaningful gender equity and mainstreaming, and ensure an increased proportion of women in operational supervisory and management roles within the programme.

The assessment was planned for the first half of 2021.<sup>83</sup>

In 2020, NPA did not conduct land release of mined areas, only of CMR. Overall, 56% of NPA's employees in Cambodia are women, including 68% of operational staff and 55% of managerial level/supervisory positions.<sup>84</sup>

According to CMAA data, as at March 2019, NPMEC had a total of 294 employees (290 operational), all of whom were men.<sup>85</sup>

All international operators in Cambodia disaggregate relevant mine action data by gender and age.

## INFORMATION MANAGEMENT AND REPORTING

The CMAA has used the Information Management System for Mine Action New Generation (IMSMA NG) since 2014. The CMAA is now upgrading the system to IMSMA Core. As at May 2021, however, the COVID-19 pandemic was slowing the process.<sup>86</sup> A significant backlog of data was resolved in 2019/20, before large-scale migration of existing data to IMSMA Core could begin.<sup>87</sup> CMAC, with support from NPA, finished uploading 8,381 backlogged CMAC records from explosive ordnance disposal (EOD) spot tasks onto the national database in 2020.<sup>88</sup> IMAS minimum data requirements will be incorporated as Cambodia migrates to IMSMA Core.<sup>89</sup> All the standardised data collection forms are being digitised and tested in the new system.<sup>90</sup>

NPA also supported CMAA to undertake a data verification project in Banteay Meanchey, Battambang, and Pailin provinces, which aimed to improve the quality of the data in the DBU system through assessment of whether or not SHAs could be released through cancellation. Approximately 30% of the areas visited appeared to meet the criteria for cancellation and reclamation under CMAS. The data verification project itself cannot cancel land, which is the intended purpose of the follow on LR-NTS. The data verification project was continued into 2021, as well as a follow on LR-NTS project with UNDP CfRIV funding.<sup>91</sup>

The CMAA's DBU is responsible for collecting, storing, analysing, and disseminating data in support of planning and prioritisation.<sup>92</sup> Improvements to information management are ongoing in Cambodia,<sup>93</sup> and the CMAA has worked closely with the GICHD on the development of online data collection tools, such as through use of tablets to allow data collection in the field and which allow MAPUs and QMTs to enter data online and verify the data submitted by operators.<sup>94</sup> Data relating to anti-personnel mine contamination, survey, and clearance in IMSMA are considered relatively accurate and up-to-date.<sup>95</sup>

Strengthening the national information management system for mine action is an objective of the National Mine Action Strategy 2018–25.<sup>96</sup> NPA has been conducting capacity development activities with the CMAA under an FCDO consortium project and also with funding from Norway.<sup>97</sup> This included introduction of a web-based application

for MAPUs to enable better prioritisation of the tasks for operators' annual work plans, which is expected to increase the effectiveness of mine clearance across the sector in Cambodia.<sup>98</sup> It also included the development of a national mine action standard (IM-CMAS [Cambodian Mine Action Standard]) on information management. The IM-CMAS has been implemented since 2019 and the CMAA ensures compliance internally within the CMAA and by clearance operators.<sup>99</sup>

Regular TRG meetings organised by the CMAA DBU and held with operators continued throughout 2020, to discuss challenges, lessons learnt, and areas of improvement. They also allowed for reconciliation of data and the updating of the IMSMA database.<sup>100</sup> The main operators (CMAC, HALO, MAG, and NPA) agree that data collection forms are consistent.<sup>101</sup>

The CMAA shares all available data with operators every one or two months.<sup>102</sup> In 2018, the DBU set up a virtual private network (VPN), which allows operators to send their daily data input directly into the DBU IMSMA database. The DBU controls the quality of all submitted reports and approves them via this online network.<sup>103</sup> The CMAA plans to move everything related to data submission online soon.<sup>104</sup> In 2020, the CMAA successfully tested a new system and deployed it to CSHD to support field data collection and their daily operation.<sup>105</sup>

Cambodia submits timely Article 7 transparency reports and gives regular statements on progress at the meetings of States Parties to the APMB. There have, though, been issues with the accuracy of information in Cambodia's reporting in the past, evidenced by discrepancies between data submitted by operators and that offered by the CMAA. The CMAA also reportedly still faces some issues with the late submission of reports by some operators, and also some technical challenges with the mapping of polygons, which it is working with operators to address.<sup>106</sup>

In 2019, Cambodia submitted a detailed and well prepared six-year Article 5 deadline extension request from 1 January 2020 to 31 December 2025, which was granted by States Parties at the Fourth Review Conference in November 2019.

## PLANNING AND TASKING

Cambodia's National Mine Action Strategy 2018–2025 was officially launched in May 2018 with eight goals for clearance of mines, CMR, and other ERW. The first goal is to release all known mined areas by 2025 through planned land release of 110km<sup>2</sup> a year from 2020. The accompanying Three-Year Implementation Plan 2018–20 has now been replaced by a new Implementation Plan 2021–23, which sets out the activities and indicators to implement the strategy.<sup>107</sup>

In 2019, Cambodia submitted its Article 5 extension request with revised land release targets for 2019–25, as set out in Table 3, with predicted annual land release targets increasing over time as additional deminers are projected to come on board and become operational.<sup>108</sup> The targets assume that significant additional international funding will be secured allowing for deployment of 2,000 additional Royal Cambodian Army deminers, which has yet to happen. The annual targets in the extension request also assume that no new contamination will be added to the database, but more than 74.8km<sup>2</sup> of previously unrecorded mined area was added to the database in 2020. In 2020, Cambodia released 77.3km<sup>2</sup> (according to Article 7 data for 2020), again well short of the annual extension request target of 110km<sup>2</sup>.

As of April 2021, CMAA reported that 818km<sup>2</sup> of mined area remained, equating to annual land release targets of 163.6km<sup>2</sup>.<sup>109</sup> As previously indicated, current capacity and land release output indicates there will continue to be a significant gap between the predicted and actual land release output for 2021. The COVID-19 pandemic also risks impacting operations. In addition, many of the remaining mined areas are harder to reach minefields or mined areas which were not fully released previously.

**Table 3: Annual targets for release of mined area in 2019–25<sup>110</sup>**

Year	Targets (m <sup>2</sup> )
2019	84,250,000
2020	110,000,000
2021	110,000,000
2022	146,546,809
2023	146,546,809
2024	146,546,809
2025	146,546,809
<b>Total</b>	<b>890,437,236</b>

The CMAA maintains the annual national clearance work plan for landmines and cluster munition remnants, made up of all the provincial clearance work plans. MAPUs are responsible for developing their own work plans in accordance with the planning and prioritisation guidelines. The PMACs approve the MAPU's work plans, which are then endorsed by the CMAA. The MAPUs use the provincial work plan to monitor clearance performance and report progress to the PMAC and the CMAA.<sup>111</sup>

The current planning and prioritisation practices in Cambodia follow a combination of top-down and bottom-up approaches. The top-down approach involves CMAA establishing a list of priority villages based on agreed criteria. The bottom-up approach involves MAPUs coordinating at the provincial level to develop a clearance list, again, using agreed criteria.<sup>112</sup>

In accordance with objective three of goal one of Cambodia's National Mine Action Strategy 2018–25, the CMAA is adopting a mine-free village policy, and has identified 500 priority villages from the most anti-personnel mine contaminated provinces, totalling a mined area of 220km<sup>2</sup> that will be released by 2021, and the remainder by 2025.<sup>113</sup> In accordance with the revised planning and prioritisation guidelines, the defined criteria to determine the 500 priority villages was based on the size of the mined area in the village, the number of casualties there, the number of people in the village, and the levels of poverty.<sup>114</sup> At least 75% of funding and resources are allocated to these priority villages, leaving a maximum of 25% of resources to address clearance needs outside of the priority villages through the MAPU process.<sup>115</sup> In addition, to maintain government and donor support to mine action by generating publicity and awareness, CMAA will also implement a complementary policy that will prioritise working to declare villages with very low contamination (defined as SHAs with less than 50,000m<sup>2</sup>) as mine-free.<sup>116</sup>

Within this bottom-up element of Cambodia's approach, the MAPUs, in consultation with operators, then develop a list of priority minefields within the priority villages identified by the CMAA. The following criteria are used by MAPUs for prioritising minefields: BLS land classification; casualty data; intended beneficiaries; level of threat; development needs; and post-clearance land use.<sup>117</sup> It is hoped that this process will be facilitated by the introduction of the web-based application for MAPUs. It is important to note that often the BLS data is old and the information may not or no longer be accurate. Therefore, working closely with the communities is vital to understand the most up-to-date picture of the landmine threat, thus help better prepare for the process of building annual work plans. Local authorities, such as village and commune chiefs, attend the meetings held by MAPUs for planning. However, these meetings often result in operators providing the list of tasks they intend to work on, rather than the engagement by all parties to avoid selecting tasks for clearance that may in fact potentially be released through non-technical survey.<sup>118</sup>

Operators have expressed some reservations about the "mine-free village" approach, with The HALO Trust prioritising clearance of those areas with the most significant impact: the highest density minefields within the communities at/near the Thai-Cambodian border. The HALO Trust has expressed concern that the mine-free village approach will lead to clearance of low-impact, low-density minefields in order to declare the village mine-free, diverting resources from high impact areas.<sup>119</sup> MAG's concerns that impact should be taken into account in the prioritisation criteria have been noted by CMAA, which has stated there will be some flexibility in the planning and prioritisation process.<sup>120</sup> The CMAA has stated it does not believe that high-density minefields should be the deciding factor for prioritisation as they believe prioritisation should be based on addressing the needs of the affected communities.<sup>121</sup>

While following the CMAA prioritisation processes, HALO also includes the following in its planning and prioritisation matrix with MAPUs: minefields with confirmed anti-personnel mine threat and confirmed/suspected anti-vehicle mine threat, minefields that have caused accidents, proximity to population, and development requests. HALO prioritises clearance of highest impact minefields validated by HALO's internal pre-clearance non-technical survey and post-clearance study to maximise its impact for the beneficiary communities.<sup>122</sup>

According to NGO operators, the criteria and prioritisation processes for landmine tasks in Cambodia are well established and survey and clearance task dossiers are issued in a timely and effective manner.<sup>123</sup> There was, however, a suggestion that Cambodia should consider categorising infrastructural projects that require formal clearance prior to construction as stand-alone projects agreed between the implementer, mine action operator, and the donor (if applicable), rather than including such projects together with humanitarian mine action.<sup>124</sup>

## LAND RELEASE SYSTEM

### STANDARDS AND LAND RELEASE EFFICIENCY

Mine action is conducted according to Cambodian Mine Action Standards (CMAS), which are broadly consistent with IMAS,<sup>125</sup> although the criteria for cancellation of mined area require strengthening.<sup>126</sup> No updates were made to the NMAS in 2020.<sup>127</sup> In 2019–21, the CMAA, with support from NPA with FCDO funding and in consultation with other mine clearance operators, is in the process of developing new standards.<sup>128</sup>

As at April 2021, the CMAS chapter on mechanical clearance was pending approval having received comments from international operators, CMAC, and armed forces; the CMAS on animal detection systems and on the environment, were finalised and awaiting approval by the CMAA; and the CMAS on information management had been finalised and approved by the CMAA.<sup>129</sup> In addition, the CMAS on explosive ordnance risk education (EORE) has also been revised and updated to bring it in line with IMAS. It included input from all operators and was completed in early 2021, and expected to be distributed in April/May 2021.<sup>130</sup>

National standards are reflected in operators' standing operating procedures (SOPs).<sup>131</sup> Updates to the SOPs are conducted as and when required, such as when a need is identified through the CMAA-led TRG. Reviews are conducted in consultation with all operators, and against IMAS and best practice.<sup>132</sup> A comprehensive review of CMAS, referenced in the National Strategy, was planned for 2021.<sup>133</sup>

HALO Trust believes the sector would benefit from a review of the CMAS on non-technical survey.<sup>134</sup> In addition, NPA believes that the QM CMAS needs to be strengthened and QM capacity further developed.<sup>135</sup> In 2019, the CMAA said it would improve efficiency of its QMT to strengthen QA and QC of survey and clearance activities to ensure that any additional mined areas registered in the national database are supported by strong and clear evidence and are appropriately size.<sup>136</sup> However, the financial impact of COVID-19 on the national budget had reportedly impacted the QM capacity under CMAA in 2020.<sup>137</sup>

The National Mine Action Strategy 2018–25 emphasises the need for more efficient use of demining assets. In a 2018 monitoring visit to Pailin province it was found that one in three of the mined areas could have been released by LR-NTS rather than full clearance. UNDP has now mandated that all minefields in its targeted villages will be assessed before clearance assets are deployed,<sup>138</sup> and has engaged NPA to conduct LR-NTS before the MAPUs select the mined areas for tendering for 2022.<sup>139</sup>

In a positive development, in December 2020 CMAA initiated and carried out a 30-day pilot project known as "ground data verification". The pilot project team revisited previously surveyed minefields of a total size of 55km<sup>2</sup> in six districts in three provinces: Banteay Meanchey, Battambang, and Pailin. Some areas of the minefields had been reclaimed by local people and used for housing, farming, food storage, roads, irrigation schemes, and other construction. Those areas that potentially met the criteria as stipulated in CMAS Chapter 15 on "Land Release" could be released through non-technical survey. The rest could be defined as actual mined areas to be released through applicable land release methodologies. As a result, the ground data verification project indicated 21km<sup>2</sup> (38%) of the minefields could be released through non-technical survey and 34km<sup>2</sup> (62%) are actual mined areas. Follow-on non-technical survey is required to actually cancel mined area found not to be contaminated, as the data verification itself does not result in cancellation. The result will help mine action operators to apply land release methodologies and use financial resources more effectively and efficiently to achieve higher productivity, more swiftly, and with lower cost. Contingent on available funding and the COVID-19 pandemic situation, the CMAA planned to continue this project in the most mined-affected districts to update all existing surveyed minefields in the western part of the country.<sup>140</sup>

The "ground data verification project" has been tested and implemented by the QMT to conduct quality checks on newly captured polygons and visit all existing surveyed polygons. This project will help the CMAA understand the current situation of BLS polygons on the ground before approval of polygon data into the national database or before deciding which methodology should be applied to release of existing polygons.<sup>141</sup>

The HALO Trust recommends that the CMAA QMTs engage the non-technical survey activities of operators through quality assuring their non-technical survey reports, ideally on the ground and as frequently as possible. HALO would also encourage fellow operators to conduct a non-technical assessment of tasks before selecting them for clearance. This will help avoid deploying clearance assets to tasks that can be released through non-technical survey due to land having been reclaimed through cultivation or incorrectly recorded initially.<sup>142</sup> CMAA has now started putting non-technical survey (including new survey and cancellation) dossiers for detailed analysis before accepting them onto IMSMA, which is a positive development.<sup>143</sup>

The CMAA also plans to organise annual meetings to discuss baseline survey and resurvey activity to ensure that national survey standards are consistently applied by all operators. For example, a mined area reclaimed for productive use must meet certain criteria to be released through non-technical survey without undertaking technical survey.<sup>144</sup>

The CMAA recognises that for Cambodia to complete clearance by 2025 (which it is not currently on track to achieve), the full toolbox of land release methodologies must be properly applied and operational efficiency encouraged among operators.<sup>145</sup>

## OPERATORS AND OPERATIONAL TOOLS

Mine clearance is undertaken mainly by the national operator, CMAC, and two international mine action NGOs, MAG and The HALO Trust. To a lesser extent, mine clearance is also conducted by national operator the NPMEC, and by national NGO, CSHD. International operator APOPO also conducts clearance in partnership with CMAC.<sup>146</sup>

**Table 4: Operational clearance capacities deployed in 2020<sup>147</sup>**

Operator	Manual teams	Total deminers	Animal detection capacity	Machines	Comments
APOPO (working in partnership with CMAC)	3	22	4 animal detection teams (26 handlers with 36 rats and 4 dogs)		Includes technical survey and clearance capacity. Existing animal detection system (ADS) teams were enlarged in 2020, and an additional ADS team was created.
Armed forces	N/K	N/K	N/K	N/K	
CMAC	76 Demining platoons and mobile units	648	7 mine detection dog teams (40 dogs and 40 handlers) and 2 mine detection rat teams (36 mine detection rats)	11 demining machines	Based on data provided by the CMAA and CMAC.
CSHD	1	12	0	0	
HALO Trust	82	738	0	2	An increase on the 73 teams and 657 deminers in 2019.
MAG	17	136		2 mechanical operation units and 2 command vehicles.	Three mine detection dog (MDD) teams, contracted out to CMAC. MAG's capacity increased by one team, compared to the previous year.
NPMEC	N/K	392*	N/K	N/K	*Based on March 2019 data and includes both survey and clearance capacity for mines and ERW.
<b>Totals</b>		<b>More than 1,950** deminers</b>			

N/K = not known \*\* There is reported to be approximately 2,600 deminers in Cambodia<sup>148</sup>

APOPO, works in partnership with CMAC in Siem Reap, Preah Vihear, and Battambang provinces.<sup>149</sup> In its partnership with CMAC, APOPO deployed a SMART Technical Survey Dog (TSD) team for the first time in March 2019. In 2020, APOPO completed a GICHD Evaluation Project of the SMART TSD, during which it surveyed more than 1.43km<sup>2</sup> of mine affected areas and found 149 landmines and 61 items of ERW. The methodology combines long-range search dogs with the use of track and trace systems and unmanned aerial vehicles (UAVs). In addition, cluster munition-contaminated areas were also surveyed as part of the evaluation project (see *Clearing Cluster Munition Remnants* report on Cambodia). The results of the pilot project, which are reported to reveal

increased productivity, were expected to be published in 2021.<sup>150</sup> In 2020, Magawa, one of APOPO's top performing mine detection rats was awarded the PDSA [The People's Dispensary for Sick Animals] Gold Medal for his lifesaving work in Cambodia, detecting 39 landmines and 28 items of UXO over a five-year career.<sup>151</sup>

CMAC has 14 non-technical survey teams, totalling 70 survey personnel, and 4 technical survey teams totalling 20 personnel. From March 2021, CMAC has reformed its technical survey and clearance teams from five-person to seven-person teams.<sup>152</sup> APOPO provides CMAC with mine detection rats (MDR) and MAG reported contracting three mine detection dog (MDD) teams to CMAC.

The increase in HALO's clearance capacity in 2020 was due to the start of a new United States (US) PM/WRA grant and an increase in German funding. In addition, from mid-way through 2020, HALO's non-technical survey capacity increased from nine teams to eleven survey teams, thanks to the funding increase. This excludes team leaders, medics, and drivers who form vital roles in the multi-purpose survey teams (non-technical survey, EOD call out, cancellation, and EORE).<sup>153</sup>

MAG's survey capacity in 2020 was seven non-technical survey teams, totalling 16 personnel and 17 technical survey teams, totalling 145 personnel. MAG re-introduced dual sensor hand-held detectors (HSTAMIDS) into its detection toolbox and trained 15 deminers in Q4 of 2020. It also deployed MMW 330 mechanical clearance assets from Q2, and had a partnership with APOPO to trial the use of Mine Detection Rats which started in Q4.<sup>154</sup>

NPA deployed MDDs to conduct technical survey on the Thai-Cambodian border in early 2020 in support of CMAC/TMAC cross border initiative on the Cambodia-Thai border.<sup>155</sup> In 2021, NPA was deploying capacity to conduct non-technical survey on SHAs in Pailin, Battambang, and Banteay Meanchey provinces to see if they meet CMAA's cancellation and/or reclamation criteria. This project will be conducted in partnership with the CMAA and UNDP.<sup>156</sup>

UNDP has supported the CMAA through the Clearing for Results (CfR) programme since 2006, awarding contracts funded by international donors through a process of competitive bidding. In 2019, CMAC was awarded three clearance contracts totalling \$1.7 million dollars with clearance targeted in high-priority villages in Battambang, Banteay Meanchey, and Pailin provinces. Phase three of the CfR exceeded the land release target of 47km<sup>2</sup>, and upon completion Phase Three had released nearly 59km<sup>2</sup> of mined area from March 2016 to February 2020.<sup>157</sup> For 2020, CfRIV released 11.42km<sup>2</sup> (4.67km<sup>2</sup> through technical survey and 6.75km<sup>2</sup> through clearance) and destroyed 951 anti-personnel mines, 6 anti-vehicle mines, and 992 items of ERW, with a total contract value of \$1.63 million (including top-up).<sup>158</sup> Two clearance contracts were awarded to CMAC and one to HALO Trust, all for the seven-month period from June to December 2020.<sup>159</sup>

In its 2019 Article 7 extension request, the CMAA calculated that in order to meet its 2025 land release targets for anti-personnel mined area, an extra 2,000 deminers and 100 support personnel will be needed. The CMAA proposes that these deminers come from the Royal Cambodian Army and that the Cambodian government will cover the salaries, insurance, uniforms, and operational costs, but that it will require funding from the international community for training (to be provided by CMAC), vehicles, and equipment.<sup>160</sup> It was estimated that during the first year of deployment the deminers will be able to release 35km<sup>2</sup>, rising to 57km<sup>2</sup> from the second year.<sup>161</sup> The CMAA is seeking international financial assistance for training (to be provided by CMAC) and equipment for the planned deminers, and in August 2020, the Indian government pledged \$1.5 million to help increase the demining capacities of the Royal Cambodian Army.<sup>162</sup> As at the end of 2020, none of the additional 2,000 army deminers had been deployed, but the CMAA said that some army staff have been trained by CMAC and equipped for future deployment.<sup>163</sup>

The CMAA is responsible for quality management and since 2016 has deployed eight QMTs.<sup>164</sup> In 2017, with UNDP support, it developed the PMS, which will track land use and socio-economic changes after release of mined area/ERW-contaminated land as well as monitor the implementation of NMAS as a management tool for the sector.<sup>165</sup> The CMAA approved the PMS, which was launched in May 2018 and in late 2019 a pilot-test was conducted during which 121 completed minefields were visited and the associated beneficiaries were interviewed by MAPU staff in Banteay Meanchey province. Data from the 121 mined areas were collected, cleaned, and analysed, and a PMS report was produced in December 2020.<sup>166</sup>

CMAA reported that drones had been used to support non-technical and technical survey activities to capture more information for better planning for clearance.<sup>167</sup>

## LAND RELEASE OUTPUTS AND ARTICLE 5 COMPLIANCE

### LAND RELEASE OUTPUTS IN 2020

According to data reported by the CMAA to Mine Action Review, a total of more than 78.72km<sup>2</sup> of mined area was released in 2020, of which more than 49.99km<sup>2</sup> was cleared, more than 15.17km<sup>2</sup> was reduced through technical survey, and nearly 13.5km<sup>2</sup> was cancelled through non-technical survey. The amount of area surveyed and cleared in 2020, as reported by the CMAA, is slightly greater than that reported in Cambodia's Article 7 report (covering 2020).<sup>168</sup> Over the course of the year, however, more than 74.8km<sup>2</sup> of previously unrecorded mine contamination across 432 SHAs was added to the database.<sup>169</sup>

## SURVEY IN 2020

In 2020, more than 28.73km<sup>2</sup> was released through survey, of which nearly 15.17km<sup>2</sup> was cancelled through non-technical survey (see Table 5) and 13.56km<sup>2</sup> was reduced through technical survey (see Table 6), based on data provided to Mine Action Review by the CMAA.<sup>170</sup> Compared to the previous year, the amount reduced through technical survey in 2020 was more than double the 7.5km<sup>2</sup> of mined area reduced in 2019, while the amount of mined area cancelled in 2020 was less than the 26.9km<sup>2</sup> cancelled in 2019.<sup>171</sup> However, in 2021, the CMAA advised that the 2019 data had subsequently been revised to 6.01km<sup>2</sup> of mined area cancelled through non-technical survey and 11.59km<sup>2</sup> reduced through technical survey, due to delay in the clearance operator data being reported to the CMAA, validated, and entered into IMSMA.<sup>172</sup>

Furthermore, in 2020 the LRNTS+BLS captured an additional total of more than 74.8km<sup>2</sup> across 432 SHAs of additional contamination (see Table 2 above).<sup>173</sup>

**Table 5: Cancellation through non-technical survey in 2020 (CMAA data)<sup>174</sup>**

Operator	Area cancelled (m <sup>2</sup> )
CMAC	90,464
HALO Trust	11,604,326
MAG	3,475,807
<b>Total</b>	<b>15,170,597</b>

**Table 6: Reduction through technical survey in 2020 (CMAA data)<sup>175</sup>**

Operator	Area reduced (m <sup>2</sup> )
CMAC	11,216,092
CSHD	31,355
HALO Trust	333,251
MAG	1,979,893
<b>Total</b>	<b>13,560,591</b>

## CLEARANCE IN 2020

In 2020, nearly 50km<sup>2</sup> of mined area was cleared, with the destruction of 11,563 anti-personnel mines and 28,668 other items of explosive ordnance (see Table 7), based on data provided to Mine Action Review by the CMAA.<sup>176</sup> This is a huge increase on the 20.9km<sup>2</sup> of mined area cleared and 4,111 anti-personnel mines destroyed in 2019.<sup>177</sup> However, in 2021, the CMAA advised that the 2019 data has subsequently been revised upwards to 45.62km<sup>2</sup>, due to delay in the clearance operator data being reported to the CMAA, validated, and entered into IMSMA.<sup>178</sup> The amended 2019 CMAA data, however, looks likely to also contain significant anti-vehicle mine clearance.

In 2020, during EOD spot tasks/call-outs, a further 6,394 anti-personnel mines and 93 anti-vehicle mines were destroyed: 3,043 anti-personnel mines and 33 anti-vehicle mines by CMAC; 664 anti-personnel mines and 6 anti-vehicle mines by CSHD; 1,802 anti-personnel mines and 44 anti-vehicle mines by HALO Trust; 878 anti-personnel mines and 4 anti-vehicle mines by MAG; and 7 anti-personnel mines and 6 anti-vehicle mines by NPA.<sup>179</sup>

Of the total anti-personnel mined area released in 2020, 23 minefields totalling over 1.12 km<sup>2</sup> were subject to full clearance without any anti-personnel mines being found.<sup>180</sup> CMAC reported that it cleared 24 mined areas, totalling 104,989m<sup>2</sup>, in which no anti-personnel mines were found.<sup>181</sup> HALO reported that it cleared 62 mined areas (classified as category A2 minefields), totalling 3,821,274m<sup>2</sup>, in which

no anti-personnel mines, and only 4 anti-vehicles mines, were found. Twenty-five of these tasks were cleared as part of the UNDP Clearing for Results project. These A2 tasks are primarily planned for anti-vehicle mine clearance, with large-loop detectors (LLD), which HALO said are ten times more efficient than standard hand-held detectors. LLDs are calibrated to pick up large metal signals from the items, such as high-metal-content anti-vehicle mines or anti-personnel fragmentation mines. HALO also reported clearing one mined area (category A1), totalling 17,979m<sup>2</sup>, in which no anti-personnel or anti-vehicle mines were found.<sup>182</sup> CSHD reported that it cleared 12 polygons in 2020, totalling 757,331m<sup>2</sup>, in which no anti-personnel mines were found.<sup>183</sup>

APOPO's clearance and technical survey output, in partnership with CMAC, increased by 65% in 2020, compared to the previous year. APOPO said the main reason for the increased productivity was the technical survey dog component of its operations. While APOPO aims to conduct technical survey whenever appropriate, many of the mined areas it worked on contained scattered mines making technical survey challenging. All of the mined areas cleared by APOPO in 2020, in partnership with CMAC, contained anti-personnel mines.<sup>184</sup>

CSHD said the number of mined areas cleared in 2020, was an increase on the previous year, as it had adapted to NMAS and its headquarters were closer to the mined area.<sup>185</sup>

**Table 7: Mine clearance in 2020 (CMAA data)<sup>186</sup>**

Operator	Area cleared (m <sup>2</sup> )	AP mines destroyed	UXO destroyed during mine clearance
CMAC	40,272,670	8,539	28,377
CSHD	663,930	105	104
HALO Trust	6,938,902	2,470	154
MAG	2,118,224	449	33
<b>Totals</b>	<b>49,993,726</b>	<b>11,563</b>	<b>28,668</b>

## ARTICLE 5 DEADLINE AND COMPLIANCE



Under Article 5 of the APMBC (and in accordance with the second extension, of 5 years and 11 months, granted by States Parties in 2019), Cambodia is required to destroy all anti-personnel mines in areas under its jurisdiction or control as soon as possible, but not later than 31 December 2025. Based on current land release output, Cambodia will not meet this deadline.

Cambodia remains committed to clearing all anti-personnel mine contamination by the end of 2025, and believed it could meet its obligations by this date, "if action plans can be achieved on time".<sup>187</sup> However, the 2025 completion target relied on additional funding, Cambodia bringing on board an additional 2,000 deminers (a near doubling of capacity), and no additional mined areas being added to the national database. However, no additional army demining capacity was deployed in 2019 or 2020 and an additional 74.8km<sup>2</sup> of mined area was added to the database in 2020. Based on existing capacity and funding as at February 2020, the CMAA expected it will take 11 years to complete clearance.<sup>188</sup>

The CMAA said an assessment of current capacities in Cambodia is required to realise the 2025 vision. It plans to coordinate the mine action sector to mobilise more resources, increase capacity, and promote more innovative approaches/toolboxes to enhance operational efficiency and effectiveness, particularly the CMAA's new "ground data verification" approach. The CMAA hopes this new approach will help Cambodia quickly identify actual contaminated area.<sup>189</sup>

It is also vital that the CMAA has effective QM processes in place to ensure that only new mined areas with evidence of contamination are entered into IMSMA. Additional desk analysis of surveyed areas is reportedly now being implemented to prevent flawed areas entering the database.<sup>190</sup>

According to its 2019 extension request, Cambodia planned to steadily increase annual land release (i.e. survey and clearance) output from 84km<sup>2</sup> in 2019 (which it did not achieve) to 110km<sup>2</sup> from 2020 to 2021 (which it did not achieve in 2020), to 146.5km<sup>2</sup> from 2022 to 2025. Between the Third Review Conference in 2014 and the Fourth Review Conference in 2019, Cambodia released an average of 84km<sup>2</sup> per year, so the land release targets it has set itself require additional funding and capacity as well as exceptional performance. Cambodia released a total of nearly 63.22km<sup>2</sup>

through survey and clearance in 2019, and 78.72km<sup>2</sup> in 2020; well short of the 84.3km<sup>2</sup> and 110km<sup>2</sup> respective annual land release targets forecasted in the extension request.<sup>191</sup>

**Table 8: Five-year summary of AP mine clearance**

Year	Area cleared (km <sup>2</sup> )
2020	49.99
2019	20.94*
2018	41.00
2017	27.68
2016	25.33
<b>Total</b>	<b>164.94</b>

\* In 2021, the CMAA subsequently revised the 2019 clearance output upwards to 45.62km<sup>2</sup>. However, the amended 2019 CMAA data looks likely to also contain significant anti-vehicle mine clearance.

The high-density K5 minefield lies along the Cambodian-Thai border, including in areas where the border is not demarcated and where access is limited. In order to make progress towards its 2025 clearance deadline, Cambodia must ensure that it can release all contaminated land along its border with Thailand, which will require cross-border cooperation.<sup>192</sup> Improved relations between Thailand and Cambodia have opened the way for this. The Cambodia-Thailand General Border Committee, chaired by the Deputy Prime Minister and Minister of Defence from both countries, has agreed that CMAC and the Thailand Mine Action Centre (TMAC) can cooperate to conduct demining along the Thai-Cambodian border.<sup>193</sup> In September 2018, CMAC and TMAC met and agreed to find a task for a pilot border project: a small area that could be cleared within a month as a symbolic demonstration of two sides working together. In September 2019, CMAC and TMAC agreed the respective mined areas on a demarcated section of the Thai-Cambodia border, distanced not too far apart.<sup>194</sup> The selected area on the Cambodian side is Kilobuan village, Poipet District, Banteay Meanchey province. The selected pilot project area on the Thai side is in Sano-noi village, Aranyaprathet District, Sa Kaeo province.<sup>195</sup>

TMAC and CMAC signed the agreement for the pilot site survey on 2 March 2020,<sup>196</sup> after which operations were expected to start shortly thereafter and were expected to

take no more than 50 days to complete.<sup>197</sup> CMAC completed its clearance of the pilot site between the start of March and end of June 2020, and cleared more than 3.18km<sup>2</sup>, destroying 34 anti-personnel mines and 32 items of UXO.<sup>198</sup> As at July 2021, CMAC had released a further 0.35km<sup>2</sup> of mined area along the border in Banteay Meanchey province, and the next pilot project was under negotiation.<sup>199</sup>

According to the CMAA, survey and clearance operations in Cambodia were not badly affected by the COVID-19 pandemic in 2020. The land release operations were generally in remote areas where population movement is limited.<sup>200</sup> APOPO reported it had a 15-day re-organisation due to the COVID-19 outbreak, during which operational calendars were adjusted and new preventative measures were taken. No further working days were lost in 2020.<sup>201</sup> CMAC said that its mine clearance operations continued as normal in 2020.<sup>202</sup> CSHD said that its deployment plan was sometimes delayed or changed in 2020 due to COVID-19, and it also saw an increase in costs due to required personal protective equipment (PPE) and COVID-19 health checks twice a month.<sup>203</sup>

HALO remained fully operational in 2020, with promptly implemented COVID-19 preventative measures. HALO also supported the CMAA in distribution of COVID-19 prevention posters in HALO's area of operations; distribution of hygiene kits to ID poor families (in its area of operations, with a grant from the Bobby Charlton Foundation), and conducted a Diabetes screening project (supported by HALO Head Office and the UK Embassy in Cambodia).<sup>204</sup> NPA reported its operations were largely able to continue as normal with staff abiding by COVID-19 hygiene measures.<sup>205</sup> MAG said its operations in Battambang province were suspended during

April 2020, during which there were no land release outputs, with teams then redeployed to the field in May, following implementation of COVID-19 mitigation measures.<sup>206</sup>

In the last quarter of 2020, the Government of Cambodia declared that international operators may not work on the K5 mine belt or within 7km of any international border at this time. Only demining teams from the military are permitted to work on these tasks. This has resulted in MAG withdrawing all teams from Pailin and redeploying them to Battambang province.<sup>207</sup> Similarly, HALO reported that in July 2020, the Cambodian military temporarily suspended access to the minefields forming the K5 mine belt. The suspension is due to the revision of planning processes between the militaries, provincial authorities, and CMAA. While the suspension remains in place, the CMAA is working with both parties to agree on the planning process and to re-gain access to the border minefields as soon as possible. In the interim, HALO clearance teams have moved to other minefields within HALO's area of operation across north-west Cambodia. Minefields further back from the border typically yield significantly fewer anti-personnel mines, but this is balanced by the mine clearance teams now working in areas of a higher population density.<sup>208</sup>

From February to May 2021, the COVID-19 situation has been more serious and problematic, due to the spread of the virus across the country, especially in the cities of Phnom Penh and Sihanouk. As a result, personnel from CMAA and clearance operators have not been able to travel between provinces, due to enforced restrictions. According to the CMAA, field operations were mostly suspended and retained in one place.<sup>209</sup>

## PLANNING FOR RESIDUAL RISK AFTER COMPLETION

Goal seven of Cambodia's National Mine Action Strategy 2018–2025 is to establish a sustainable national capacity to address residual threats after 2025. Reference to the issue is also included in the foreword signed by the Cambodian Prime Minister and noted throughout the document. Objectives include reviewing by 2020 the legal, institutional, and operational framework, strategy, and capacity needed to address the residual threats.<sup>210</sup> As at July 2021, the review had yet to take place, but was planned for 2022 under the current National Mine Action Strategy's three-year implementation plan 2021–2023.<sup>211</sup>

In Phase I (2018–22) of the national strategy Cambodia planned to "develop a comprehensive residual threats strategy; establish a residual threat legal and institutional framework; and establish residual threats regulatory and operational frameworks including coordination, planning, and prioritisation, and sustained information management system". In Phase II (2023–25), Cambodia plans to "develop residual threat capacity in preparation to transition from the traditional mine action program; determine resource mobilisation schemes to support the development of residual threat capacity and its future activities; and to conduct post-programme evaluation of achievements and outcomes after the conclusion of the strategy in 2025 to evaluate performance, lessons learned, recommendations for efficiencies and improvements in any remaining mine action".<sup>212</sup>

In its 2019 APMBC Article 5 extension request, the CMAA said it is likely that the Royal Cambodian Army will be tasked with addressing explosive threats after 2025.<sup>213</sup>

In February 2021, the CMAA and the GICHD began interviewing national and international operators and other relevant stakeholders to discuss the topic of institutional and operational frameworks and capacity for addressing residual threat

- 1 APMBC Article 7 Report (covering 2020), Point 4; and email from Ros Sophal, on behalf of Prum Sophakmonkol, Secretary General, CMAA, 14 May 2021.
- 2 Article 7 Report (covering 2019), Point 4.
- 3 2019 Article 5 deadline Extension Request, Annex 1.
- 4 Ibid., Additional Information, undated but August 2019, p. 5.
- 5 Article 7 Report (covering 2019), Point 4.
- 6 Interview with Prum Sophakmonkol, CMAA, Geneva, 11 February 2020; and email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 7 Article 7 Report (covering 2019), Point 4; and email from Rebecca Letven, Country Director, MAG, 7 April 2020.
- 8 Statement by the Chair of the Committee on Article 5 Implementation on the Analysis of the Request for extension submitted by Cambodia, Oslo, 26 November 2019.
- 9 Article 7 Report (covering 2020), Point 4; and email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 10 Interviews in Phnom Penh with Prum Sophakmonkol, CMAA, 24 April 2018; Matthew Hovell, Head of Region SE Asia, HALO Trust, 26 April 2018; Greg Crowther, MAG; Su Yeon Yang, Conflict Prevention Officer, and Tong Try, National Mine Action Advisor, UNDP, 23 April 2019; and Heng Rattana, Director General, CMAC, 25 April 2019.
- 11 CMAA, National Mine Action Strategy 2018–2025, p. 8.
- 12 2019 Article 5 deadline Extension Request, p. 21.
- 13 Email from Prum Sophakmonkol, CMAA, 1 July 2020.
- 14 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 15 Statement of Cambodia on Article 5 implementation, APMBC 18th Meeting of States Parties (virtual meeting), 16–20 November 2020.
- 16 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 17 Email from Zlatko Vezilic, Programme Manager, NPA, 5 May 2020.
- 18 Email from Michael Heiman, Program Manager, APOPO, 4 May 2020.
- 19 Emails from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021; and Portia Stratton, Programme Manager, NPA, 17 August 2021.
- 20 Emails from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021; and Matthew Hovell, HALO, 9 April 2021.
- 21 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 22 Email from Prum Sophakmonkol, CMAA, 1 July 2020.
- 23 "Recent floods unearth concealed explosives", *The Phnom Penh Post*, 12 October 2020, at: <https://bit.ly/3isFTKy>.
- 24 CMAA, National Mine Action Strategy 2018–2025, p. 1; and The HALO Trust, "Where we work: Cambodia", accessed 10 July 2019, at: <http://bit.ly/313JTKs>.
- 25 2019 Article 5 deadline Extension Request, p. 21.
- 26 Article 7 Report (covering 2020), Form 4.
- 27 Article 7 Report (covering 2019), Form 4.
- 28 Email from Ros Sophal, CMAA, 17 September 2021.
- 29 Video interview with Ros Sophal, CMAA, 7 September 2021.
- 30 Email from Matthew Hovell, HALO, 9 April 2021.
- 31 Video interview with Ros Sophal, CMAA, 7 September 2021.
- 32 Interview with Prum Sophakmonkol, CMAA, Phnom Penh, 24 April 2019.
- 33 2019 Article 5 deadline Extension Request, Additional Information, undated but August 2019, p. 2.
- 34 Email from Lasha Lomidze, Programme Manager, HALO Trust, 15 May 2020.
- 35 Article 7 Report (covering 2020), Form 4. CMAA reported to Mine Action Review, that 74.89km<sup>2</sup> of additional mined area had been identified in 2020, across 435 SHAs; slightly higher than reported in Cambodia's Article 7 report covering 2020 (email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021). There are some discrepancies between the amount of newly discovered contamination reported by the CMAA and that reported by operators directly to Mine Action Review. This is because the CMAA only records new areas in the database, once the necessary checks and QA have been completed. CMAC reported discovering 730 polygons in 2020, totalling 149,099,139m<sup>2</sup> (email from Oum Pumro, CMAC, 9 June 2021), which exceeds the total amount of newly discovered mined area reported by the CMAA. CSHA does not conduct the survey, but did find unrecorded contamination during its operations, which it reported to the CMAA (email from Chhun Bora, Training and Monitor Officer, CSHD, 19 April 2021). HALO surveyed more than 1.62km<sup>2</sup> of AP mine-contaminated area in 2020, most of which was emergency responses where locals found mines or accidents occurred (email from Matthew Hovell, HALO, 9 April 2021). No previously unreported mined areas were discovered by MAG in 2020 (email from Alexey Kruk, Programme Manager, MAG, 29 March 2021).
- 36 CMAA, "Legal framework and mandate", at: <http://bit.ly/2W7r3dJ>.
- 37 Interviews with Su Yeon Yang, and Tong Try, UNDP, 23 April 2019; and Rebecca Letven, MAG, Phnom Penh, 25 April 2019.
- 38 CMAC, "20 Years' Achievement in Mine Action 1998-2018 and Path Ahead", 2018.
- 39 Interview with Heng Rattana, CMAC, Phnom Penh, 25 April 2019.
- 40 GICHD, "Landmines and Land Rights in Cambodia", December 2010, pp. 9 and 13.
- 41 Email from Zlatko Vezilic, NPA, 5 May 2020.
- 42 CMAA, National Mine Action Strategy 2018–2025, p. 24; and email from Tong Try, UNDP, 18 June 2019.
- 43 Emails from Prum Sophakmonkol, CMAA, 1 July 2020; Alexey Kruk, MAG, 29 March 2021; and Zlatko Vezilic, NPA, 5 May 2020.
- 44 Email from Matthew Hovell, HALO, 8 April 2021.
- 45 CMAA, National Mine Action Strategy 2018–2025, p. 24; and emails from Tong Try, UNDP, 18 June 2019 and 27 July 2021.
- 46 Email from Zlatko Vezilic, NPA, 5 May 2020.
- 47 Email from Alexey Kruk, MAG, 29 March 2021.
- 48 Emails from Zlatko Vezilic, NPA, 4 April 2019; Rebecca Letven, MAG, 9 May and 28 June 2019; and Damian O'Brien, HALO Trust, 10 April 2019.
- 49 Email from GICHD, 1 July 2020.
- 50 Email from Portia Stratton, NPA, 21 April 2021.
- 51 Email from Portia Stratton, NPA, 17 August 2021.
- 52 UNDP, "Clearing for Results Phase III project document", 17 December 2015; and interviews with Su Yeon Yang and Tong Try, UNDP, 23 April 2019.
- 53 Email from Tong Try, UNDP, 28 July 2021.
- 54 Article 5 deadline Extension Request, 27 March 2019, p. 12.
- 55 Email from Prum Sophakmonkol, CMAA, 1 July 2020.
- 56 Emails from Rune Dale-Andresen, Country Director, NPA, 26 September 2020; and Tong Try, UNDP, 28 July 2021.
- 57 Emails from Prum Sophakmonkol, CMAA, 11 September 2019; and Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 6 September 2020; and Statements of Cambodia on Second Extension Request, APMBC Fourth Review Conference, Oslo, 27 November 2019; and on Article 5 implementation and enhancement of cooperation and assistance, APMBC 18th Meeting of States Parties (virtual meeting), 16–20 November 2020.
- 58 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 59 Emails from Prum Sophakmonkol, CMAA, 11 September 2019; Rebecca Letven, MAG, 7 April 2020; and Lasha Lomidze, HALO Trust, 15 May 2020.
- 60 Article 5 deadline Extension Request, 27 March 2019, p. 6.
- 61 Statements of Cambodia on Article 5 implementation and enhancement of cooperation and assistance, APMBC 18th Meeting of States Parties (virtual meeting), 16–20 November 2020; and email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 62 Email from Tong Try, UNDP, 27 July 2021.
- 63 CMAA, Three-Year Implementation Plan 2018–2020, Phnom Penh, undated but 2018, p. 14.
- 64 DFID Capacity Development Report, Activity Detail Extract, 18 September 2018.
- 65 Emails from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021; and Portia Stratton, NPA, 21 April 2021.
- 66 Email from Portia Stratton, NPA, 21 April 2021.
- 67 Emails from Portia Stratton, NPA, 21 April 2021; and Tong Try, UNDP, 27 July 2021.
- 68 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 69 Email from Arianna Calza Bini, Head of GMAP division, GICHD, 7 September 2020.
- 70 CMAA, National Mine Action Strategy 2018–2025, p. 22; and email from Tong Try, UNDP, 27 July 2021.
- 71 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.

- 72 Email from Prum Sophakmonkol, CMAA, 1 July 2020.
- 73 Email from Tong Try, UNDP, 27 July 2021.
- 74 Email from Michael Heiman, APOPO, 22 March 2021.
- 75 Email from Michael Heiman, APOPO, 4 May 2020.
- 76 Email from Chhun Bora, CSHD, 19 April 2021.
- 77 Email from Oum Phumro, CMAC, 9 June 2021.
- 78 Ibid.
- 79 CMAC, "20 Years' Achievement in Mine Action 1998-2018 and Path Ahead", 2018; interview with Heng Rattana, CMAC, Phnom Penh, 25 April 2019; and email from Oum Phumro, Deputy Director General, CMAC, 28 July 2020.
- 80 Email from Oum Phumro, CMAC, 9 June 2021.
- 81 Emails from Lasha Lomidze, HALO Trust, 15 May 2020; and Matthew Hovell, HALO, 9 April 2021.
- 82 Email from Alexey Kruk, MAG, 29 March 2021.
- 83 Emails from Rebecca Letven, MAG, 7 April 2020; and Alexey Kruk, MAG, 29 March 2021.
- 84 Email from Portia Stratton, NPA, 20 April 2021.
- 85 Article 5 deadline Extension Request, Additional Information, undated but August 2019, Annex 18.
- 86 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 87 Email from GICHD, 1 July 2020.
- 88 Emails from Zlatko Vezilic, NPA, 4 April, 25 June, 10 July 2019, and 19 March 2020; and interview with Prum Sophakmonkol, CMAA, Phnom Penh, 24 April 2019.
- 89 Email from GICHD, 1 July 2020.
- 90 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 91 Emails from Portia Stratton, NPA, 20 April and 17 August 2021.
- 92 CMAA, National Mine Action Strategy 2018–2025, p. 22.
- 93 Email from Zlatko Vezilic, NPA, 5 May 2020.
- 94 Email from Prum Sophakmonkol, CMAA, 1 July 2020; and interview with Ros Sophal, CMAA, 30 June 2021.
- 95 Email from Zlatko Vezilic, NPA, 5 May 2020.
- 96 CMAA, National Mine Action Strategy 2018–2025, pp. 14–15.
- 97 Emails from Portia Stratton, NPA, 20 April and 17 August 2021.
- 98 Email from Lasha Lomidze, HALO Trust, 15 May 2020.
- 99 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 100 Email from Alexey Kruk, MAG, 29 March 2021.
- 101 Email from Zlatko Vezilic, NPA, 5 May 2020.
- 102 Ibid.
- 103 Email from Rebecca Letven, MAG, 9 May 2019; and interview with Prum Sophakmonkol, CMAA, Phnom Penh, 24 April 2019.
- 104 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 105 Ibid.
- 106 Email from Rebecca Letven, MAG, 7 April 2020.
- 107 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 108 Statement of Cambodia on Second Extension Request, APMBBC Fourth Review Conference, Oslo, 27 November 2019.
- 109 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 110 2019 Article 5 deadline Extension Request, p. 8.
- 111 Ibid., p. 5.
- 112 Ibid., p. 8; and interviews with Prum Sophakmonkol, CMAA, Phnom Penh, 24 April 2018; and Geneva, 11 February 2020.
- 113 2019 Article 5 deadline Extension Request, p. 7; Statement of Cambodia on Second Extension Request, Fourth APMBBC Review Conference, Oslo, 27 November 2019; and interview with Prum Sophakmonkol, CMAA, Geneva, 11 February 2020.
- 114 2019 Article 5 deadline Extension Request, p. 31; and 2019 Article 5 deadline Extension Request, Additional Information, undated but August 2019, p. 3.
- 115 CMAA, National Mine Action Strategy 2018–2025, pp. 14–15.
- 116 2019 Article 5 deadline Extension Request, p. 9; and interview with Prum Sophakmonkol, CMAA, Geneva, 11 February 2020.
- 117 2019 Article 5 deadline Extension Request, pp. 30–31; and email from Damian O'Brien, HALO Trust, 10 April 2019.
- 118 Email from Lasha Lomidze, HALO Trust, 13 August 2021.
- 119 Interview with Lasha Lomidze, HALO Trust, 3 May 2019; and email, 13 August 2021.
- 120 Email from Rebecca Letven, MAG, 9 September 2019.
- 121 2019 Article 5 deadline Extension Request, Additional Information, undated but August 2019, p. 4.
- 122 Emails from Matthew Hovell, HALO, 9 April 2021; and Lasha Lomidze, HALO Trust, 13 August 2021.
- 123 Email from Rebecca Letven, MAG, 7 April 2020.
- 124 Emails from Lasha Lomidze, HALO Trust, 15 May 2020; and Matthew Hovell, HALO, 9 April 2021.
- 125 Emails from Rebecca Letven, MAG, 7 April 2020; and Zlatko Vezilic, NPA, 19 March 2020.
- 126 Email from Portia Stratton, NPA, 17 August 2021.
- 127 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021; Matthew Hovell, HALO, 9 April 2021; Alexey Kruk, MAG, 29 March 2021; and Portia Stratton, NPA, 20 April 2021.
- 128 Emails from Prum Sophakmonkol, CMAA, 11 September 2019; and Zlatko Vezilic, NPA, 4 April 2019.
- 129 Email from Portia Stratton, NPA, 21 April 2021.
- 130 Emails from Portia Stratton, NPA, 21 April 2021; and Matthew Hovell, HALO, 8 April 2021.
- 131 Emails from Zlatko Vezilic, NPA, 4 April 2019 and Rebecca Letven, MAG, 9 May 2019.
- 132 Emails from Rebecca Letven, MAG, 9 May 2019; and Damian O'Brien, HALO Trust, 10 April 2019.
- 133 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 134 Email from Lasha Lomidze, HALO Trust, 15 May 2020.
- 135 Email from Zlatko Vezilic, NPA, 5 May 2020.
- 136 Email from Prum Sophakmonkol, CMAA, 11 September 2019; and 2019 Article 5 deadline Extension Request, Additional Information, undated but August 2019, p. 2.
- 137 Email from Portia Stratton, NPA, 20 April 2021.
- 138 UNDP, "Clearing for Results Phase III Annual Report", 2018.
- 139 Email from Tong Try, UNDP, 28 July 2021.
- 140 Emails from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021; and Portia Stratton, NPA, 17 August 2021.
- 141 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 142 Emails from Lasha Lomidze, HALO Trust, 15 May 2020 and 13 August 2021.
- 143 Email from Matthew Hovell, HALO, 9 April 2021.
- 144 2019 Article 5 deadline Extension Request, Additional Information, undated but August 2019, p. 2.
- 145 2019 Article 5 deadline Extension Request, p. 43.
- 146 Ibid., p. 48.
- 147 2019 Article 5 deadline Extension Request, Additional Information, undated but August 2019, Annex 18; emails from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021; Oum Phumro, CMAC, 9 June 2021; Michael Heiman, APOPO, 22 March 2021; Chhun Bora, CSHD, 19 April 2021; Alexey Kruk, MAG, 29 March 2021; and Matthew Hovell, HALO, 9 April 2021.
- 148 'Government commits to removing landmines by 2025', *The Phnom Penh Post*, 23 February 2021, at: <https://bit.ly/3g7xU2Y>.
- 149 Email from Michael Heiman, APOPO, 22 March 2021.
- 150 Emails from Michael Heiman, APOPO, 4 May 2020; and 22 March and 28 July 2021.
- 151 Email from Michael Heiman, APOPO, 28 July 2021; and PDSA website, 'HeroRAT Magawa - PDSA Gold Medal', undated, at: <https://bit.ly/3fTtd0p7>.
- 152 Email from Oum Phumro, CMAC, 9 June 2021.
- 153 Email from Matthew Hovell, HALO, 9 April 2021.
- 154 Emails from Alexey Kruk, MAG, 29 March 2020; and Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 155 Email from Portia Stratton, NPA, 20 April 2021.
- 156 Ibid.
- 157 Email from Tong Try, UNDP, 19 June 2020.
- 158 Email from Tong Try, UNDP, 28 July 2021.

- 159 Emails from Tong Try, UNDP, 19 June and 21 July 2020.
- 160 2019 Article 5 deadline Extension Request, p. 9; and interview with Prum Sophakmonkol, CMAA, Geneva, 11 February 2020.
- 161 2019 Article 5 deadline Extension Request, p. 41.
- 162 "India Provides \$1.5 million to Support Cambodia's Demining Program", *Cambodianess*, 10 August 2020, at: <https://bit.ly/36V5rJr>.
- 163 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 164 Email from CMAA, 2 May 2017.
- 165 Interview with Edwin Faigmane, UNDP, Phnom Penh, 24 April 2018.
- 166 Emails from Tong Try, UNDP, 19 June 2020 and 28 July 2021.
- 167 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 168 Email from Ros Sophal, CMAA, 17 September 2021. According to Cambodia's Article 7 report (covering 2020), a total of more than 77.3km<sup>2</sup> of mined area was released in 2020, of which more than 46.4km<sup>2</sup> was cleared, nearly 17.5km<sup>2</sup> was reduced through technical survey, and nearly 13.5km<sup>2</sup> was cancelled through non-technical survey. The reason for the difference in 2020 survey and clearance data reported by CMAA in September 2021, compared to that reported in Cambodia's Article 7 report (covering 2020), is that 2020 land release data reported by clearance operators to the CMAA is sometimes delayed.
- 169 Article 7 Report (covering 2020), Form 4.
- 170 Email from Ros Sophal, CMAA, 17 September 2021.
- 171 Email from Prum Sophakmonkol, CMAA, 11 September 2019.
- 172 Video interview with Ros Sophal, CMAA, 7 September 2021.
- 173 Article 7 Report (covering 2020), Point 4.
- 174 Email from Ros Sophal, CMAA, 17 September 2021. The amount of mined area cancelled through non-technical survey in 2020 reported by the CMAA directly to Mine Action Review was slightly higher than the 13,456,263m<sup>2</sup> reported in Cambodia's Article 7 report. The CMAA data matched the data reported directly by CMAC (email from Oum Phumro, CMAC, 9 June 2021) and HALO Trust (email from Matthew Hovell, HALO, 9 April 2021). The CMAA data was also broadly consistent, although slightly higher, compared to the nearly 3.08km<sup>2</sup> MAG reported that it cancelled in 2020, in Battambang and Pailin provinces (email from Alexey Kruk, MAG, 29 March 2021).
- 175 Email from Ros Sophal, CMAA, 17 September 2021. The amount of mined area reduced through technical survey in 2020 reported by the CMAA to Mine Action Review was less than the 17,450,872km<sup>2</sup> reported in Cambodia's Article 7 report (covering 2020). The CMAA data matched the data reported directly by CMAC (email from Oum Phumro, CMAC, 9 June 2021), CSHD (email from Chhun Bora, CSHD, 19 April 2021). MAG reported that it reduced nearly 0.40km<sup>2</sup> through technical survey in 2020, in Battambang and Pailin provinces (email from Alexey Kruk, MAG, 29 March 2021) and APOPO reported that it reduced nearly 1.72km<sup>2</sup> through technical survey in 2020, in partnership with CMAC (email from Michael Heiman, APOPO, 22 March 2021).
- 176 Email from Ros Sophal, CMAA, 17 September 2021.
- 177 Ibid.
- 178 Video interview with Ros Sophal, CMAA, 7 September 2021.
- 179 Emails from Ros Sophal, CMAA, 17 September 2021; Oum Phumro, CMAC, 9 June 2021; Chhun Bora, CSHD, 19 April 2021; Matthew Hovell, HALO, 9 April 2021; Alexey Kruk, MAG, 29 March 2021; and Portia Stratton, NPA, 20 April 2021.
- 180 Email from Ros Sophal, CMAA, 17 September 2021.
- 181 Email from Oum Phumro, CMAC, 9 June 2021.
- 182 Emails from Matthew Hovell, HALO, 9 April 2021; and Lasha Lomidze, HALO Trust, 13 August 2021.
- 183 Email from Chhun Bora, CSHD, 19 April 2021.
- 184 Email from Michael Heiman, APOPO, 22 March 2021.
- 185 Email from Chhun Bora, CSHD, 19 April 2021.
- 186 Email from Ros Sophal, CMAA, 17 September 2021. The amount of mined area released through clearance in 2020 reported by the CMAA to Mine Action Review was more than the 46,418,027m<sup>2</sup> reported cleared in Cambodia's Article 7 report (covering 2020), and also more than the 10,085 anti-personnel mines and 23,466 anti-vehicle mines reported destroyed. The clearance data reported to Mine Action Review by operators differed: CMAC reported that it cleared 40.17km<sup>2</sup> of mined area in 2020 during which it destroyed a total of 5,229 anti-personnel mines, 58 anti-vehicle mines; and 5,234 items of UXO (email from Oum Phumro, CMAC, 9 June 2021); CSHD reported that it cleared nearly 0.73km<sup>2</sup> in 2020, with the destruction of 113 anti-personnel mines, 3 anti-vehicle mines, and 113 other UXO (email from Chhun Bora, CSHD, 19 April 2021); HALO Trust reported that it cleared 6.94km<sup>2</sup> of mined area in 2020 during which it destroyed a total of 2,470 anti-personnel mines, 122 anti-vehicle mines; and 154 items of UXO (email from Matthew Hovell, HALO, 9 April 2021); and MAG reported that it cleared 3.70km<sup>2</sup> in 2020, in Battambang and Pailin provinces, and destroyed 449 anti-personnel mines and 63 other items of UXO (email from Alexey Kruk, MAG, 29 March 2021). As part of its partnership with CMAC, APOPO reported that it cleared nearly 2.15km<sup>2</sup> in 2020, during which it destroyed 419 anti-personnel mines, 1 anti-vehicle mine, and 379 items of UXO (email from Michael Heiman, APOPO, 22 March 2021). UNDP reported that 6.75km<sup>2</sup> of mined area was cleared by the CfR project in 2020, during which 951 anti-personnel mines, 6 anti-vehicle mines, and 992 items of ERW were destroyed (email from Tong Try, UNDP, 28 July 2021).
- 187 Statement of Cambodia on Article 5 implementation, APMBC 18th Meeting of States Parties (virtual meeting), 16–20 November 2020.
- 188 Interview with Prum Sophakmonkol, CMAA, Geneva, 11 February 2020.
- 189 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 190 Email from Matthew Hovell, HALO, 9 April 2021.
- 191 2019 Article 5 deadline Extension Request, p. 7.
- 192 Ibid., p. 38.
- 193 Emails from Shushira Chonhenchob, NPA (on behalf of Lt-Gen. Sittipol Nimnuan, Director General, TMAC), 8 April 2019; and Prum Sophakmonkol, CMAA, 1 July 2020.
- 194 "CMAC, Thais join forces to clear mines at border provinces", *The Phnom Penh Post*, 24 September 2019, at: <http://bit.ly/3ejuyrW>.
- 195 Email from Ft. Lt. Chotiboon Anukulvanich, on behalf of Lt-Gen. Sittipol Nimnuan, TMAC, on 27 February 2020.
- 196 Cambodian Mine Action Centre (CMAC), "A record of discussions signed between CMAC and TMAC", 3 March 2020, available at: <http://bit.ly/34yiUEW>.
- 197 Email from Ft. Lt. Chotiboon Anukulvanich, on behalf of Lt-Gen. Sittipol Nimnuan, TMAC, on 27 February 2020.
- 198 Email from Oum Phumro, CMAC, 9 June 2021.
- 199 Ibid.
- 200 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 201 Email from Michael Heiman, APOPO, 22 March 2021.
- 202 Email from Oum Phumro, CMAC, 9 June 2021.
- 203 Email from Chhun Bora, CSHD, 19 April 2021.
- 204 Email from Matthew Hovell, HALO, 9 April 2021.
- 205 Email from Portia Stratton, NPA, 21 April 2021.
- 206 Email from Alexey Kruk, MAG, 29 March 2021.
- 207 Ibid.
- 208 Email from Matthew Hovell, HALO, 9 April 2021.
- 209 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
- 210 CMAA, National Mine Action Strategy 2018–2025, p. 14.
- 211 Email from Tong Try, UNDP, 27 July 2021.
- 212 CMAA, National Mine Action Strategy 2018–2025, p. 16.
- 213 Article 5 deadline Extension Request, Additional Information, undated but August 2019, p. 5.