CAMBODIA

MINE ACTION REVIEW

CLEARING CLUSTER MUNITION REMNANTS 2024

KEY DATA

CLUSTER MUNITION CONTAMINATION: HEAVY

NATIONAL ESTIMATE

731 KM²

SUBMUNITION CLEARANCE IN 2023

38.24KM²

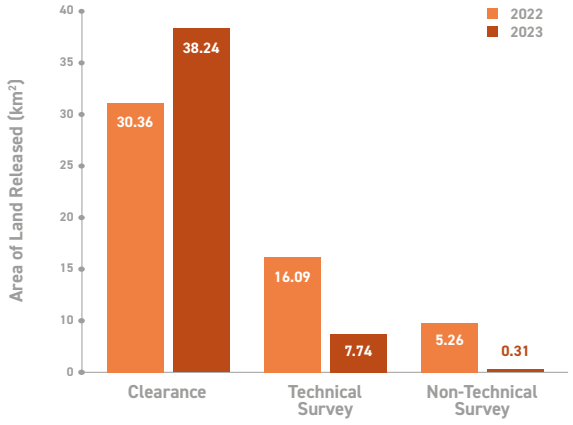
(OPERATOR DATA)

SUBMUNITIONS DESTROYED IN 2023

7,800

(INCLUDING 507 DESTROYED IN SPOT TASKS) (OPERATOR DATA)

LAND RELEASE OUTPUT



KEY DEVELOPMENTS

Cambodia released 27.5km² of area affected by cluster munition remnants (CMR) in 2023 according to official data. This represented a drop of almost half compared to the previous year, largely resulting from the priority Cambodia gave to trying to meet its clearance deadline under the Anti-Personnel Mine Ban Convention. The official figure, as has typically been the case, significantly understates the results reported by operators, pointing to delays in quality assurance of tasks and final approval of land release reports, which hold back the uploading of results into the database.

In 2023, the Cambodia Mine Action and Victim Assistance Authority (CMAA) added 25.6km² of previously unidentified CMR hazardous areas to the database which included small areas in three provinces that were not previously identified as affected by CMR. The Cambodian Mine Action Centre (CMAC) started a new survey of all air-dropped ordnance, including cluster munitions, in April 2024. It expected the survey to take 18 months.

RECOMMENDATIONS FOR ACTION

- **Cambodia should accede to the Convention on Cluster Munitions (CCM) as a matter of priority.**
- **Cambodia should comply with its obligations under international human rights law to clear CMR on territory under its jurisdiction or control as soon as possible.**
- **The CMAA should elaborate a dedicated strategy for CMR survey and clearance in consultation with operators, with realistic annual targets for land release and an accompanying resource mobilisation plan.**
- **The CMAA should strengthen information management and ensure timely release of comprehensive mine action data.**

CLUSTER MUNITION SURVEY AND CLEARANCE CAPACITY

MANAGEMENT

- Cambodian Mine Action Authority (CMAA)

NATIONAL OPERATORS

- Cambodian Mine Action Centre (CMAC)
- Cambodia Self Help Demining (CSHD)

INTERNATIONAL OPERATORS

- APOPO
- Mines Advisory Group (MAG)
- Norwegian People's Aid (NPA)

OTHER ACTORS

- United Nations Development Programme (UNDP)

UNDERSTANDING OF CMR CONTAMINATION

Cambodia has extensive CMR contamination but is still working to determine the extent. At the end of 2023, it reported 2,497 confirmed and suspected hazardous areas in 21 of Cambodia's 24 provinces covering nearly 731km^2 (see Table 1).[1] The total represented only a marginal increase (0.2%) on the previous year but the CMAA added 25.6km^2 of previously unidentified hazardous areas to the database which included small areas in three provinces that were not previously identified as affected by CMR.[2]

Cambodia's CMR contamination results mainly from intensive bombing by the United States (US) during the Vietnam War which was concentrated in north-eastern provinces along the borders with the Lao People's Democratic Republic and Vietnam. The US Air Force dropped at least 26 million explosive submunitions, between 1.9 million and 5.8 million of which are estimated to have not exploded on landing.[3] Assessment of the resulting contamination, however, remains a work in progress.[4]

Pinpointing the size of Cambodia's CMR contamination is complicated by the evolution of CMR survey methodologies. Close to 80% of the total CMR contamination data identified at the end of 2023 consisted of suspected hazardous areas (SHAs) identified in a baseline survey of explosive ordnance conducted between 2009 and 2020. That survey used a mine survey methodology ill-suited to CMR hazards, producing inflated polygons which included large amounts of land with no CMR while missing areas that do contain CMR.

From 2015, Cambodia adopted cluster munition remnants survey (CMRS) and cluster munition technical survey (TS) identifying confirmed hazardous areas (CHAs). Continuing survey and resurvey of some Baseline Survey (BLS) polygons through TS is producing more accurate, evidence-based data.[5] CHAs made up 21% of the overall contamination estimate at the end of 2023, compared with 13% three years earlier.[6] The Cambodian Mine Action Centre (CMAC) started a new survey of all air-dropped ordnance, including cluster munitions, in April 2024. It expected the survey to take 18 months.[7]

All confirmed areas of CMR contamination were found in eight eastern provinces at the end of 2022 when they also accounted for 479km^2 (68%) of the total but two provinces with no recorded CHAs (Kampong Tom and Prey Vihear) added another 208km^2 of SHA.

Table 1: CMR contamination by province or region (at end 2023)[8]

Province or Region	CHAs	Area (m^2)	SHAs	Area (m^2)	Total area (m^2)
Battambang	0	0	3	124,551	124,551
Banteay Meanchey	0	0	2	2,713	2,713
Kampong Cham	125	23,119,939	83	18,034,675	41,154,614
Kampong Chhnang	0	0	15	2,016,698	2,016,698
Kampong Speu	0	0	85	12,366,578	12,366,578
Kampong Thom	1	81,860	349	65,261,209	65,343,069
Kampot	0	0	2	103,392	103,392
Kandal	0	0	65	6,688,547	6,688,547
Kratie	95	26,105,885	116	37,966,464	64,072,349
Mondul Kiri	0	0	80	27,449,223	27,449,223
Oddar Meanchey	0	0	1	26,326	26,326
Phnom Penh	0	0	18	1,720,486	1,720,486
Preah Sihanouk	0	0	14	2,984,350	2,984,350

1 Email from Hean Kimsin, Director, Social and Economic Planning Department, CMAA, 15 June 2024.

2 The three provinces were Banteay Meanchey, Oddar Meanchey, and Pursat.

3 South East Asia Air Sortie Database, cited in D. McCracken, "National Explosive Remnants of War Study, Cambodia", NPA in collaboration with CMAA, Phnom Penh, March 2006, p. 15; Human Rights Watch, "Cluster Munitions in the Asia-Pacific Region", April 2008; and Handicap International (HI), *Fatal Footprint: The Global Human Impact of Cluster Munitions*, HI, Brussels, November 2006, p. 11.

4 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 10 May 2022.

5 Email from Portia Stratton, Programme Manager, Norwegian People's Aid (NPA), 19 April 2022, and online interview, 13 May 2022; email from Alexey Kruk, Country Manager, Mines Advisory Group (MAG), 6 May 2022; and online interview with Tony Fernandes, Technical Operations Manager, MAG, 16 May 2022.

6 Emails from Tep Kallyan, Deputy Secretary General, CMAA, 9 May 2023; and Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.

7 Interview with Heng Ratana, Director General, CMAC, in Phnom Penh, 27 May 2024.

8 Email from Hean Kimsin, CMAA, 15 June 2024.

Table 1 Continued

Province or Region	CHAs	Area (m^2)	SHAs	Area (m^2)	Total area (m^2)
Preah Vihear	0	0	109	175,593,910	175,593,910
Prey Veng	121	20,230,103	104	44,217,008	64,447,111
Pursat	0	0	6	1,203,341	1,203,341
Ratanak Kiri	235	33,109,451	303	40,720,337	73,829,788
Stung Treng	18	3,642,396	122	108,572,956	112,215,352
Svay Rieng	140	27,948,823	72	16,225,269	44,174,092
Takeo	0	0	9	1,675,366	1,675,366
Tboung Khmum	93	16,322,608	111	17,884,695	34,207,303
Totals	**828**	**150,561,065**	**1,669**	**580,838,094**	**731,399,159**

OTHER EXPLOSIVE REMNANTS OF WAR AND LANDMINES

Cambodia has extensive contamination by other explosive remnants of war (ERW). This consists mainly of anti-personnel (AP) and anti-vehicle (AV) mined areas estimated to cover 563km^2 at the end of 2022[9] and unexploded ordnance (UXO) reported in 2022 to amount to 333km^2 (see Mine Action Review's *Clearing the Mines* report on Cambodia for further information).[10] Deep-buried AV mines pose a particular threat to rural communities.[11]

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. The CMAA has Prime Minister Hun Manet as its President and a government minister, Ly Thuch, as first vice president. Its Secretary General, Ly Panharith, who was appointed in January 2023, manages CMAA's planning and operations.[12] CMAC had previously been responsible for regulating and coordinating the sector in addition to undertaking clearance. Since 2000, CMAC has concentrated on conducting demining, risk education, and training.[13] CMAC, which conducts both humanitarian and commercial survey and clearance, is Cambodia's largest mine action operator.[14]

Since 2004, Cambodia has established Provincial Mine Action Committees (PMACs) and Mine Action Planning Units (MAPUs) in mine- and CMR-affected areas tasked with establishing clearance priorities in consultation with affected communities to ensure that clearance addresses their housing, agricultural, and infrastructure needs.[15] MAPUs meet regularly with all mine action operators to plan annual mine action activities.[16]

The Cambodian government established a Technical Working Group on Mine Action (TWG-MA) as a consultative mechanism facilitating coordination between the government and implementing partners.[17] 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.[18] In 2022, the TRG for CMR survey and clearance agreed on a number of amendments to national standards to expedite and accelerate land release.[19]

The operating environment for mine action in Cambodia is permissive, with the 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), tax exemptions on demining equipment, and facilitating the importation of equipment.[20] The CMAA is open to the trialling and use of innovative survey and clearance methods and tools to improve efficiency.[21]

9 Email from Tep Kallyan, CMAA, 29 April 2023.
10 Anti-Personnel Mine Ban Convention (APMBC) Article 7 Report (covering 2021), Annex B.
11 Interview with Heng Ratana, CMAC, 27 May 2024.
12 CMAA, "Legal framework and mandate", at: http://bit.ly/2W7r3dJ.
13 CMAC, "20 Years' Achievement in Mine Action 1998-2018 and Path Ahead", 2018.
14 Interview with Heng Rattana, CMAC, Phnom Penh, 25 April 2019.
15 Geneva International Centre for Humanitarian Demining (GICHD), "Landmines and Land Rights in Cambodia", December 2010, pp. 9 and 13.
16 Email from Zlatko Vezilic, Programme Manager, NPA, 5 May 2020.
17 CMAA, National Mine Action Strategy 2018–2025, p. 24; and email from Tong Try, National Mine Action Adviser, UNDP, 18 June 2019.
18 CMAA, National Mine Action Strategy 2018–2025, p. 24; and emails from Tong Try, UNDP, 18 June 2019 and 27 July 2021.
19 Email from Sron Samrithea, Deputy Programme Manager, NPA, 6 May 2023.
20 Emails from Prum Sophakmonkol, CMAA, 11 September 2019; Rebecca Letven, MAG, 7 April 2020; and Lasha Lomidze, Programme Manager, HALO, 15 May 2020.
21 Emails from Zlatko Vezilic, NPA, 4 April 2019; Rebecca Letven, MAG, 9 May and 28 June 2019; and Damian O'Brien, HALO, 10 April 2019.

The CMAA receives technical support from a range of international organisations. The Geneva International Centre for Humanitarian Demining (GICHD) has supported the upgrade of the CMAA's information management system, gender mainstreaming, and the development of Cambodian national mine action standards (CMAS).[22] Norwegian People's Aid (NPA), with funding from the Norwegian Ministry of Foreign Affairs, provided financial and technical support for the CMAA database unit, including paying the salaries of seven employees, and supported the CMAA's quality management (QM) department, providing refresher training after the pandemic and funding one of the CMAA's QM teams.[23]

The Cambodian government contributes funding for management of the mine action sector,[24] which has included covering some of the expenses of the CMAA, and supporting a range of activities including planning and prioritisation, quality assurance/quality control (QA/QC), information management, the Cambodia mine/ERW victim information system (CMVIS), and risk education.[25] The cost of the database unit is, however, shared by NPA and UNDP.[26] Cambodia has estimated it will need almost $119 million for CMR clearance in 2020–25.[27]

GENDER AND DIVERSITY

The CMAA established a Gender Mainstreaming Team (GMT) in 2019 to coordinate with the Technical Reference Group on Gender (TRG-G). The TRG-G, which met in December 2023[28] is composed of representatives from UNDP, the Ministry of Women's Affairs (MoWA), the Ministry of Social Affairs, Veterans and Youth Rehabilitation (MoSVY), MAPUs, operators, and organisations working in risk education and victim assistance.[29]

The CMAA is implementing a Gender Mainstreaming in Mine Action Plan (GMMAP) in line with the objectives of the National Mine Action Strategy 2018–2025. Two earlier GMMAPs covered 2013–15 and 2018–22. The latest version, covering 2021–25, was approved at the end of 2021 and launched by CMAA First Vice-President Ly Thuch in March 2022.[30] It proposes the implementation of GMMAP guidelines through monitoring and evaluation of the performance of MAPUs and operators; capacity building of CMAA gender teams, MAPUs, and operators, and collecting data on the mine action needs of women; more inclusive participation in mine action, including through collecting sex, age and disability disaggregated data (SADDD); a CMAS on gender mainstreaming; and advocacy for more women in decision-making positions.[31]

Women represented a quarter of the CMAA's 100 office employees at the end of 2023, up from 20% two years earlier, and 19% of the CMAA's 74 management staff.[32] But in MAPUs women held only 11% of the positions.[33] Among operators, CMAC, the biggest in terms of capacity, reportedly employed two women among 38 management staff (5%) and 204 women among its 1,072 field staff, a relatively low ratio of 16%.[34] One-third of APOPO's total staff of 99 were women. Nearly a quarter of MAG's 526 staff are female while women made up 41% of its 418 operations personnel. It conducted a staff capacity building needs assessment in 2023 and after a competitive recruitment process hired two Cambodian female staff for senior technical positions in the field.[35] NPA's management are predominantly male but women made up almost half its 50 operations staff.[36]

Table 2: Gender composition of operators in 2023

Operator	Total staff	Women staff	Total managerial or supervisory staff	Women in managerial or supervisory positions	Total operational staff	Women in operational positions
CMAA	157	27 (25%)	74	14 (19%)	57	4 (7%)
CMAC[37]	1,432	291 (20%)	38	2 (5%)	1,072	204 (19%)
APOPO	99	32 (32%)	5	1 (20%)	94	28 (30%)

22 Email from the GICHD, 1 July 2020.
23 Email from Sron Samrithea, NPA, 6 May 2023.
24 APMBC Article 5 deadline Extension Request, 27 March 2019, p. 12.
25 Email from Prum Sophakmonkol, CMAA, 1 July 2020.
26 Emails from Rune Dale-Andresen, NPA, 26 September 2020; and Portia Stratton, NPA, 21 June 2021.
27 APMBC Article 5 deadline Extension Request, 27 March 2019, p. 55.
28 Clearing for Results IV, 2023 Annual Project Progress Report, UNDP, p. 19.
29 CMAA, National Mine Action Strategy 2018–2025, p. 22; and email from Tong Try, UNDP, 27 July 2021.
30 V. Dara, "CMAA lauds female deminers", Phnom Penh Post, 10 March 2022.
31 Mine Action Plan 2021–25, December 2021, pp. 6–7.
32 Email from Hean Kimsin, CMAA, 15 June 2024.
33 UNDP, Clearing for Results IV, 2023 Annual Project Progress Report, p. 14.
34 Ibid.
35 Email from Alexey Kruk, MAG, 11 April 2024.
36 Email from Sron Samrithea, NPA, 15 May 2024.
37 UNDP, Clearing for Results IV, 2023 Annual Project Progress Report, p. 14. CMAC reported it employed a total of 2,100 permanent staff in 2023.

Table 2 Continued

Operator	Total staff	Women staff	Total managerial or supervisory staff	Women in managerial or supervisory positions	Total operational staff	Women in operational positions
MAG	526	202 (38%)	62	14 (23%)	418	172 (41%)
NPA	68	35 (51%)	7	2 (29%)	50	24 (48%)
Totals	**2,282**	**587 (26%)**	**186**	**33 (18%)**	**1,691**	**432 (26%)**

ENVIRONMENTAL POLICIES AND ACTION

The CMAA issued a national Cambodian standard, CMAS 20, on "Environmental Management in Mine Action" in 2022. This requires operators to minimise the adverse impact of their operations on the environment, identify steps necessary to mitigate harm, and ensure that land is left in a suitable condition for its intended use. Operators are required to take account of erosion or soil degradation; possible pollution of air, water, or soil; and damage to infrastructure, wildlife, and vegetation, while also dealing with litter, debris, and other waste as well as damage to heritage sites or objects.[38]

Operators say compliance with CMAS 20 is not stringently monitored and they already apply their own environmental standard operating procedures (SOPs). The international NGO APOPO reviewed its environmental management SOPs in 2023 and by 2025 plans to adapt the syntropic farming practices it used in Tanzania to Cambodia.[39] MAG rolled out its Global Technical Standards in 2022, which included a chapter on environment that set out an IMAS-compliant, minimum baseline for all programmes to update their SOPs.[40] NPA has supported the development of standards for environmental management, including protection of forestry and pollution controls, and in 2024 was in the process of developing SOPs on environmental management.[41]

INFORMATION MANAGEMENT AND REPORTING

The CMAA's database unit (DBU), with a staff of 14, is responsible for collecting, storing, analysing, and disseminating data in support of planning and prioritisation.[42] The DBU previously used the Information Management System for Mine Action New Generation (IMSMA NG) but has installed IMSMA Core and in 2023 was migrating data across to the new platform. [43] The database unit retains IMSMA NG as a platform to receive data from CMAC before transferring it to Core. CMAC and the armed forces (RCAF) report in hard copy but international operators report digitally. The DBU receives financial and technical support from Norway through NPA, which pays the salaries of seven of the DBU's sixteen staff, and from UNDP, which pays the salaries of another six.[44] The CMAA did not convene the Technical Reference Group on information management in 2023 but said that it consulted operators bilaterally instead.[45]

PLANNING AND TASKING

Cambodia's National Mine Action Strategy 2018–2025, officially launched in May 2018, sets eight goals for the mine action sector, including clearance of mines, CMR, and other ERW. The second of these goals calls for release of prioritised cluster munition-contaminated areas by 2025. The strategy set a target of releasing 80% of known CMR contamination or 499km^2 by 2025.[46] The strategy expressed confidence that 30% of estimated CMR contamination would be released through land reclamation and cancellation. The strategy concluded that the remaining 70% of contamination would require TS and full clearance, calling for release of 44km^2 a year by these means to achieve the strategy's targets.[47]

The CMAA compiles the annual national clearance work plan for mines and CMR, which comprises all the provincial clearance work plans. The MAPUs use the provincial work plan to monitor clearance performance and report progress to the PMAC and the CMAA.[48] The current planning and

38 Email from Tep Kallyan, CMAA, 9 May 2023; and CMAS 20.
39 Interview with Mick Raine and Michael Heiman, APOPO, in Siem Reap, 28 May 2024.
40 Emails from Tony Fernandes, MAG, 31 March 2023.
41 Email from Sron Samrithea, NPA, 15 May 2024.
42 Emails from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 10 May 2022: and Hean Kimsin, CMAA, 15 June 2024.
43 Email from Tep Kallyan, CMAA, 9 May 2023.
44 Email from Sron Samrithea, NPA, 6 May 2023; UNDP, Clearing for Results IV, 2023 Annual Project Progress Report, p. 17.
45 Email from Hean Kimsin, CMAA, 15 June 2024.
46 CMAA, National Mine Action Strategy 2018–2025, p. 9.
47 Ibid., p. 10.
48 APMBC Article 5 deadline Extension Request, 27 March 2019, p. 5.

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 developing their work plans in accordance with the planning and prioritisation guidelines and in consultation with operators and local authorities.[49] The PMACs approve the MAPU's work plans, which are then endorsed by the CMAA.

The prioritisation process for the selection of CMR tasks is not as well established as the process for releasing mined areas, largely due to the absence of comprehensive, verifiable CMR data.[50] The end use for most clearance tasks is agriculture and often the land is already being cultivated regardless of CMR contamination. This makes it difficult to produce clear prioritisation criteria, so the survey and the clearance plan is based on village-by-village, commune-by-commune, and district-by-district approaches.[51]

STANDARDS AND LAND RELEASE EFFICIENCY

Mine action is conducted according to the CMAS, which are broadly consistent with the International Mine Action Standards (IMAS).[52] The CMAA approved the CMRS methodology in principle in 2017 and signed a national mine action standard for CMRS (CMAS 16) in 2018, which is being implemented by operators.[53] CMAS 16 is largely based on the experience of other programmes in the region implementing the CMRS method, which combines non-technical survey (NTS) and TS.[54] However, the CMAA and operators continued to debate criteria for releasing areas of BLS polygons not confirmed as hazardous by TS so as to accelerate land release.[55]

OPERATORS AND OPERATIONAL TOOLS

Survey and clearance of CMR in 2023 was conducted by two national operators CMAC and CSHD, and three international operators, APOPO, MAG, and NPA.

Table 3: Operational clearance capacities deployed in 2023[56]

Operator	Manual clearance teams	Total deminers*	Animal detection capacity (dogs and handlers)	Mechanical assets/ machines**	Comments
APOPO (in partnership with MAG)		4	APOPO, in partnership with MAG, had 1 TSD team with 4 dogs and 4 handlers using Garmin trackers for CMTS in Rattanakiri province.	0	
CMAC	NR	NR	NR	NR	
MAG	10 BAC teams	85	0	4 drones	MAG also deployed 3 CMTS teams with 30 staff who do not release land. Drones are used for mapping.
NPA	2	8	3 teams totalling 6 dogs and 6 dog handlers		
Totals	**12**	**97**	**10 dogs**	**4 drones**	

* Excluding team leaders, medics, and drivers. ** Excluding vegetation cutters and sifters.
EOD = Explosive ordnance disposal NR = Not reported

APOPO employed one TS dog teams with four handlers and four dogs working in a joint project with MAG in Ratanak Kiri province. The dogs work on a long (27-metre) lease and are trained to search through thick vegetation avoiding the need for brush cutting and ground preparation. They also carry Garmin electronic track-and-trace systems that allow remote monitoring and generate IMSMA-compatible data. Two of the handlers, including the team leader, are APOPO staff and two from CMAC.[57]

49 Ibid.; and interview with Prum Sophakmonkol, CMAA, Geneva, 11 February 2020.
50 Emails from Rebecca Letven, MAG, 7 April and 4 September 2020.
51 Email from Zlatko Vezilic, NPA, 4 April 2019.
52 Emails from Rebecca Letven, MAG, 7 April 2020; and Zlatko Vezilic, NPA, 19 March 2020.
53 Emails from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 6 September 2020; and Portia Stratton, NPA, 4 September 2020.
54 Email from Ros Sophal, on behalf of Prum Sophakmonkol, CMAA, 14 May 2021.
55 Online interview with Tony Fernandes, Technical Operations Manager, MAG, 16 May 2022; and email from Sron Samrithea, NPA, 5 July 2022.
56 Emails from Mick Raine, APOPO, 24 May 2024; Alexey Kuk, MAG, 11 April 2024 and Sron Samrithea, NPA, 15 May 2024.
57 Email from Mick Raine, APOPO, 24 May 2024 and interview in Siem Reap, 28 May 2024.

CMAC, employing 2,100 permanent staff in 2023[58] is the biggest demining operator in Cambodia. CMAC did not report details of capacity deployed for survey and clearance of CMR in 2023.

MAG's CMR survey and clearance operations focused on Ratana Kiri province where two of its 10 BAC teams are working with Scorpion detectors and a third team are equipped with VMX-10 detectors, all provided by the US Department of Defense's Humanitarian Demining Research & Development Programme. It also deploys two CMR TS teams and a third APOPO dog team. MAG's capacity includes four mechanical teams and drones used for mapping.[59]

NPA has expanded since 2022 when reduced funding reduced its capacity to one clearance team and four NTS teams. In 2023, NPA deployed two clearance teams, four NTS teams, and one TS team. In 2024, it has expanded further to a total of eight multi-task teams—six focused on clearance and two on TS—with another six teams conducting NTS.[60]

LAND RELEASE OUTPUTS AND PROGRESS TOWARDS COMPLETION

LAND RELEASE OUTPUTS IN 2023

Cambodia released a total of 27,498,072m^2 through survey and clearance in 2023, according to official data,[61] which is little more than half the area officially released in 2022. The CMAA attributed the downturn primarily to the high priority Cambodia gave to accelerating mine survey and clearance with a view to achieving its 2025 deadline for completion. Official results also show a sharp drop in the number of submunitions destroyed to 2,649 in 2023 – half the 5,254 items destroyed in 2022.[62] The official figure, as has typically been the case, significantly understates the results reported by operators, pointing to delays in quality assurance of tasks and final approval of land release reports, which hold back the uploading of results into the database.

SURVEY IN 2023

A sharp reduction in the area released through survey contributed to the overall downturn in CMR land release in 2023. NPA cancelled only 0.3km^2 in the course of NTS in 2023 compared with 5.3km^2 the previous year when it surveyed a lot of old tasks allowing a lot of cancellation.[63]

Table 4: CMR areas cancelled through NTS in 2023[64]

Operator	Province	Area cancelled (m^2)
NPA	Ratanak Kiri	313,756
Total		**313,756**

The area reduced through TS also sharply contracted to 7.7km^2 in 2023, less than half the 16km^2 released through TS in 2022. NPA reduced only 0.07km^2 of Ratanak Kiri province in 2023 compared with 6km^2 in 2022 and CMAC, which worked in seven other provinces reduced 7.7km^2, down from nearly 10km^2 in 2022.[65]

Table 5: CMR area reduced through TS in 2023[66]

Operator	Province	Area reduced (m^2)
CMAC	Kampong Cham, Kampong Thom, Kratie, Mondul Kiri, Prey Veng, Stung Treng, Svay Rieng	7,674,630
NPA[67]	Ratanak Kiri	67,500
Total		**7,742,130**

CLEARANCE IN 2023

Official results show CMR-affected areas released through clearance fell to 19.4km^2 in 2023, one-third less than the previous year (see Table 6).[68] But more reliable operator data suggests this was only half the amount of land cleared (see Table 7) and that operators overall increased the amount of land they cleared by 24% in 2023.

58 Interview with Heng Ratana, CMAC, 27 May 2024.
59 Email from Alexey Kruk, MAG, 11 April 2024.
60 Email from Sron Samrithea, NPA, 15 May 2024.
61 Email from Hean Kimsin, CMAA, 15 June 2024.
62 Emails from Hean Kimsin, CMAA, 15 June 2024; and Tep Kallyan, CMAA, 9 May 2023.
63 Email from Rune Andresen, Country Director, NPA, 29 May 2024.
64 Emails from Hean Kimsin, CMAA, 15 June 2024; and Rune Andresen, NPA, 29 May 2024.
65 Email from Hean Kimsin, CMAA, 15 June 2024.
66 Ibid.
67 NPA reported that it reduced 68,566m^2 through TS in 2023. Email from Rune Andresen, NPA, 29 May 2024.
68 Email from Hean Kimsin, CMAA, 15 June 2024.

Table 6: CMR clearance in 2023 (official data)[69]

Operator	Area of operation	Area cleared (m^2)	Submunitions destroyed	Submunitions destroyed in spot tasks	UXO destroyed
CMAC	Kampong Cham, Kampong Thom, Kratie, Mondul Kiri, Prey Vihear, Prey Veng, Stung Treng, Svay Rieng, Tboung Khmum	16,582,235	2,196	106	2,100
MAG	Ratanak Kiri	1,748,690	23	207	403
NPA	Ratanak Kiri	1,111,261	117	0	55
Totals		**19,442,186**	**2,336**	**313**	**2,558**

CMAC alone cleared more than 29km^2, about the same amount as in 2022, according to results provided by NPA, which monitors CMAC's Demining Unit 5 on behalf the unit's donor, the US Department of State's Bureau of Political-Military Affairs (PM/WRA).[70] MAG, which had recorded clearing 5.6km^2 in 2022 and operated with the same capacity, said it cleared 7.5km^2 in 2023, attributing the increase to easier topographical conditions allowing higher productivity.[71]

Operator data also suggest that CMAC, MAG, and NPA destroyed a total of at least 7,800 submunitions in 2023, almost three times the official total. This comprised 7,293 destroyed by operators during clearance and 507 destroyed by MAG and NPA during spot task EOD.[72] The number of CMR destroyed by CMAC in EOD operations was not immediately available.

Table 7: CMR clearance in 2023 (operator data)[73]

Operator	Province	Area cleared (m^2)	Submunitions destroyed	Other UXO destroyed
CMAC	Kampong Cham, Kampong Thom, Kratie, Mondul Kiri, Prey Vihear, Prey Veng, Stung Treng, Svay Rieng, Tboung Khmum	29,658,546	6,282	N/R
MAG[74]	Ratanak Kiri	7,466,993	831	5
NPA[75]	Ratanak Kiri	1,112,421	180	8
Totals		**38,237,960**	**7,293**	**13**

PROGRESS TOWARDS COMPLETION

Cambodia's National Mine Action Strategy 2018–2025 focused on trying to complete mine clearance though it also set a target of releasing 80% of known CMR contamination by 2025. The remaining 20% would be considered as residual. At the time, it estimated CMR contamination at 645km^2 and aimed to release 499km^2 by 2025. Cambodia believed 30% could be released through cancellation or land reclamation and called for release of 44km^2 a year through TS or clearance in order to release the rest. However, Cambodia has never reached that level of land release and continues to identify previously unrecorded CMR hazardous areas that raise the estimate of total contamination. It has recognised it will not achieve that goal and still needs to define more precisely the extent of CMR contamination.

Table 8: Five-year summary of CMR clearance

Year	Area cleared (km^2)
2023	38.24
2022	30.36
2021	20.58
2020	30.99
2019	25.23
Total	**145.40**

PLANNING FOR MANAGEMENT OF RESIDUAL CONTAMINATION

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 to the Strategy signed by the Cambodian Prime Minister and noted throughout the document. The CMAA worked with the GICHD in 2022 drafting a paper on the legal and institutional framework required for a comprehensive response to residual contamination identified after completion.[76]

69 Ibid.
70 Email from Rune Andresen, NPA, 29 May 2024.
71 Email from Alexey Kruk, MAG, 11 April 2024.
72 Emails from Alexey Kruk, MAG, 11 April 2024; and Rune Andresen, NPA, 29 May 2024.
73 Ibid.
74 Email from Alexey Kruk, MAG, 11 April 2024.
75 Email from Rune Andresen, NPA, 29 May 2024.
76 UNDP Clearing for Results IV, *Annual Project Progress Report 2022*, p. 18.