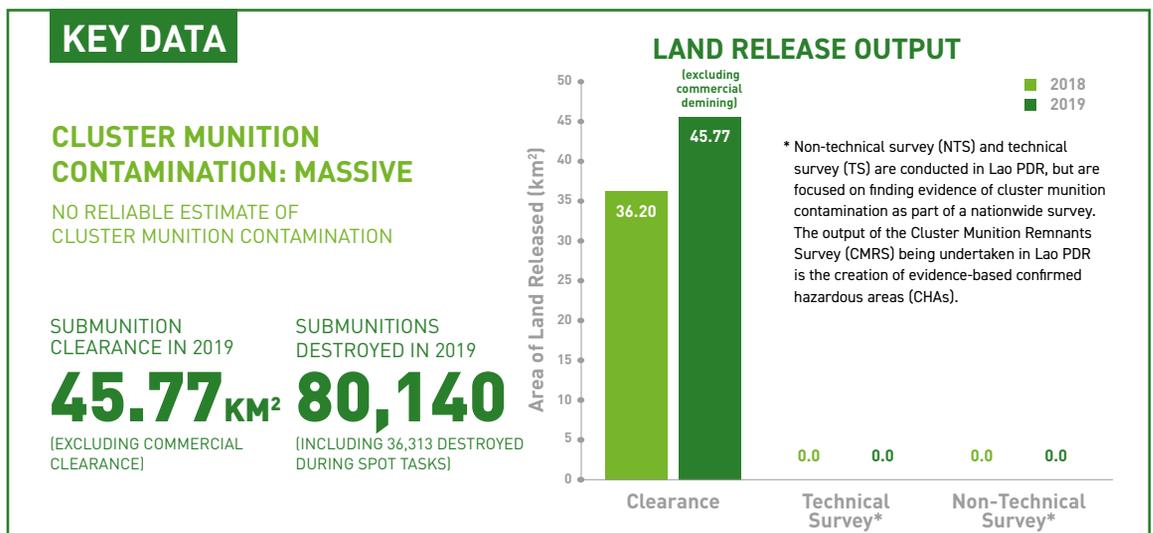


ARTICLE 4 DEADLINE: 1 AUGUST 2025

LAO PDR WILL REQUIRE MULTIPLE EXTENSIONS BEFORE REACHING COMPLETION



KEY DEVELOPMENTS

The national programme in the Lao People's Democratic Republic (Lao PDR) continued to make solid progress in the destruction of cluster munition remnants (CMR) in 2019. Lao PDR was granted a five-year extension to its Article 4 deadline at the Ninth Meeting of States Parties to the Convention on Cluster Munitions (CCM). Based on data from national and international operators, land release by clearance in 2019 was a 26% increase on the previous year, at more than 45.6km², largely thanks to greater capacity resulting from new funding.

Evidence-based survey methodology is now being applied routinely to identify confirmed hazardous areas (CHAs). Efforts were also ongoing to clean up historical errors in data records and strengthen information management systems and processes. However, the Memorandum of Understanding (MoU) process for international clearance operators remained excessively time-consuming and burdensome, resulting in avoidable delays to land release operations.

RECOMMENDATIONS FOR ACTION

- Procedures for issuing, amending, or renewing MoUs should be streamlined to avoid inefficiencies and excessive delays.
- Cooperation and coordination between clearance operators should be further strengthened. In particular, the National Regulatory Authority (NRA) should ensure that UXO Lao data from historic tasks, which is not already on the database, be made readily available to international operators to help inform survey and clearance operations.
- The NRA should ensure the Information Management System for Mine Action (IMSMA) database is comprehensive and up to date, especially given the increased volume of data resulting from the ongoing nationwide cluster munition remnants survey (CMRS).
- The NRA should prioritise the development of a planning and prioritisation system to support the CMR survey and clearance process.
- The NRA and clearance operators should strengthen coordination with provincial, district, and village-level authorities during implementation and planning of CMRS and clearance, incorporating gender considerations.
- Lao PDR should elaborate annual sector-wide work plans for survey and clearance of CMR, in collaboration with its implementing partners.
- Lao PDR should establish a country coalition, to bring together all stakeholders on a quarterly basis to discuss progress and challenges in Article 4 implementation.

ASSESSMENT OF NATIONAL PROGRAMME PERFORMANCE

Criterion	Score (2019)	Score (2018)	Performance Commentary
UNDERSTANDING OF CMR CONTAMINATION (20% of overall score)	7	7	Lao PDR does not yet have a reliable estimate of CMR contamination, but is undertaking a nationwide survey that should produce an evidence-based assessment of the full extent of CMR contamination. At least 2,873 villages are believed to be affected by CMR.
NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT (10% of overall score)	6	7	In 2019, a new Director was appointed both to the NRA and to national clearance operator, UXO Lao. There is strong national ownership from the NRA and mine action in Lao PDR is also firmly linked to the government's sustainable development planning. However, MoU procedures continued to remain complex and heavy, causing notable delay and significantly impeding the implementation and expansion of survey and clearance.
GENDER AND DIVERSITY (10% of overall score)	7	7	In early 2019, Lao PDR finalised a manual for trainers on gender mainstreaming in the UXO Sector. The government also partnered with the Association of South-East Asian Nations (ASEAN) Regional Mine Action Center (ARMAC) to deliver a Regional Workshop on Gender Equality and Empowerment in mine action in October 2019, in Vientiane. Clearance operators report having gender policies in place or are in the process of implementing such policies, consult with women and girls during survey and clearance operations, and disaggregate mine action data by sex and age.
INFORMATION MANAGEMENT AND REPORTING (10% of overall score)	6	6	Lao PDR submitted its CCM Article 4 extension request on time and it was granted at the Meeting of States Parties in September 2019. There are ongoing efforts to correct historical data in IMSMA and to improve information management systems and processes to ensure the quality and transparency of data, especially given the increased volume of data resulting from the ongoing nationwide CMRS. IMSMA VPN has been introduced, and is now used by all international clearance operators, which has helped improve the accessibility of data and the speed and quality of data entry and the reporting process. The National Mine Action Standard (NMAS) on IM was reviewed and updated in 2019, but might only be formally approved once other relevant chapters of NMAS have also been updated.
PLANNING AND TASKING (10% of overall score)	6	6	In its 2019 Article 4 extension request, Lao PDR outlined a work plan for the five-year extension period, with three potential clearance output estimates, each with measurable benchmarks, dependent on the level of funding and capacity obtained. Unfortunately, there was no sector-wide annual work plan for Lao PDR for 2019, as there had been for 2018, but one was being elaborated collectively in 2020 for 2021. No comprehensive national-level guidance on the prioritisation of clearance tasks exists, but a project began in 2019 to create a nationwide prioritisation matrix.
LAND RELEASE SYSTEM (20% of overall score)	8	8	Lao PDR's UXO Survey Standards, which specify the minimum standards and requirements for the survey of all cluster munition-contaminated areas, are well adapted to the local threat and context and adopt an evidence-based land release methodology, in line with international best practice. Land release operations in Lao PDR are conducted by a range of implementing partners, which includes the national operator UXO Lao; international non-governmental organisations (INGOs), HALO Trust, HI, MAG, and NPA; commercial clearance operators; and teams of the Lao Army.
LAND RELEASE OUTPUTS AND ARTICLE 4 COMPLIANCE (20% of overall score)	8	7	Lao PDR remains focused on the continued nationwide CMRS of CMR contamination, with the amount of CHA identified increasing by at least 17%, compared to the previous year. At the same time, clearance output of international clearance operators in 2019 increased by more than 25% compared to 2018, largely due to an increase in clearance capacity thanks to DFID funding.
Average Score	7.1	7.0	Overall Programme Performance: GOOD

CLUSTER MUNITION SURVEY AND CLEARANCE CAPACITY

MANAGEMENT

- National Regulatory Authority (NRA) Board
- National Regulatory Authority (NRA)

NATIONAL OPERATORS

- UXO Lao
- Humanitarian teams of the Lao People's Army
- Commercial operators

INTERNATIONAL OPERATORS

- The HALO Trust
- Humanity and Inclusion (HI)
- Mines Advisory Group (MAG)
- Norwegian People's Aid (NPA)
- Commercial operators

OTHER ACTORS

- Geneva International Centre for Humanitarian Demining (GICHD)
- United Nations Development Programme (UNDP)
- Tetra Tech

UNDERSTANDING OF CMR CONTAMINATION

Lao PDR does not yet have a reliable estimate of CMR contamination,¹ but is undertaking a nationwide CMRS that should produce an evidence-based assessment of the full extent of CMR contamination.² US bombing data indicate 70,000 individual target locations across Lao PDR.³ Fourteen of the country's eighteen provinces are contaminated: Attapeu, Bolikhamxay, Champasak, Houaphanh, Khammouane, Luang Prabang, Oudomxay, Phongsaly, Saravan, Savannakhet, Vientiane Capital, Vientiane Province, Xekong, and Xiengkhouang.⁴ Of these, nine are heavily affected: Attapeu, Champasak, Houaphanh, Khammouane, Luang Prabang, Saravan, Savannakhet, Xekong, and Xiengkhouang.⁵

As at the end of 2019, survey had been conducted in 1,966 villages in ten of the most contaminated provinces, resulting in 10,838 CHAs, totalling over 1,115.5km² of CMR-contaminated area (see Table 1).⁶ The nationwide survey is ongoing and has yet to be completed in any province.⁷ The amount of CHA is expected to continue to increase and may double or even triple over the next five years.⁸ As at the end of 2018, 9,284 CHAs had been identified totalling 858km².⁹

Table 1: CMR survey results (at end 2019)¹⁰

Province	No. of villages	No. of CHAs	Total area (km ²)
Attapeu	144	1,429	133.36
Bolikhamxai	24	11	0.90
Champasak	93	297	14.62
Houaphanh	72	345	36.49
Khammouane	111	477	82.35
Luang Prabang	59	205	22.24
Saravan	527	2,066	92.17
Savannakhet	320	3,558	156.68
Xekong	210	1,225	84.11
Xiengkhouang	406	1,225	492.61
Totals	1,966	10,838	1,115.53

In both its 2019 Article 4 deadline extension request and its Article 7 transparency report covering 2019, Lao PDR estimated that the total CMR contamination is approximately 8,470km², a figure unchanged since its September 2011 clearance statement to the CCM Second Meeting of States Parties. As stated above, this figure is, however, increasing as the nationwide survey progresses and the survey will help determine the extent of cluster munition contamination more accurately.¹¹

Lao PDR certainly has the world's highest level of contamination by unexploded submunitions as a result of the Indochina War of the 1960s and 1970s. The United States conducted one of the heaviest aerial bombardments in history, dropping more than two million tonnes of bombs between 1964 and 1973,¹² including more than 270 million submunitions (known locally as bombs). The failure rate is not known, but Lao PDR reports it may have been as high as 30 percent, and an estimated 80 million submunitions are thought to have remained unexploded at the end of the war.¹³

During the period of its Article 4 extension request (2020–25), Lao PDR will focus survey on the most heavily contaminated provinces currently being surveyed, but the remaining affected provinces will also need to be surveyed in order to quantify the extent of CMR contamination nationwide.¹⁴ According to the co-chairs of the UXO Sector Working Group, the United States and UNDP, significant and efficient planning will be needed if the national survey is to be completed during Lao PDR's five-year extension period.¹⁵

Through non-technical survey at the village level, the current baseline of CMR contamination is being established through inclusive consultation with women, girls, boys, and men, including, where relevant, from minority groups.¹⁶

According to Lao PDR's 2019 Article 4 deadline extension request, between the time Lao PDR became a State Party to the CCM on 1 August 2010 (when the Convention as a whole entered into force) and the end of 2018, a total of 41,088 hectares (410.9km²) was cleared, with the destruction of 518,368 submunitions. This includes clearance by humanitarian operators, commercial operators, and humanitarian clearance teams of the Lao Army.¹⁷

OTHER EXPLOSIVE REMNANTS OF WAR AND LANDMINES

Lao PDR also has extensive contamination from other explosive remnants of war (ERW), including both air-dropped and ground-fired unexploded ordnance (UXO), though the extent of contamination is not known. Clearance operators have reported the presence of at least 186 types of munition in Lao PDR. These range from 20lb fragmentation bombs to 3,000lb general-purpose bombs, as well as artillery shells, grenades, mortars, and rockets.¹⁸ Lao PDR is also contaminated, but to a much lesser extent, by anti-personnel mines and anti-vehicle mines (See Mine Action Review's *Clearing the Mines 2020* report on Lao PDR for more information).

NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT

The NRA, created by government decree in 2004 and active since mid 2006, has an interministerial board composed of representatives from government ministries and is chaired by the Minister of Labour and Social Welfare.¹⁹ The Prime Minister of Lao PDR approved a new decree, "On the Organisation and Operations of the National Regulatory Authority for UXO in Lao PDR" in February 2018. The decree defines the position, role, duties, rights, organisational structure, and the working principles and methods of the NRA.²⁰ A new Director of UXO Lao was appointed in 2019.

The NRA acts as the coordinator for national and international clearance operators and serves as the national focal point for the sector. This includes overall management and consideration of policy, planning, projects, and coordination of the implementation of the national strategy nationwide, as well as NRA planning and coordination functions at the provincial and district levels.²¹ Effective coordination is particularly needed to help prioritise clearance of the huge number of CHAs already in the database as a result of the ongoing CMRS.²² A new Director of the NRA was appointed in June 2019.²³

Lao PDR contributed \$30,911 towards rental of the NRA office in 2019 and training of UXO Lao deminers. It also makes in-kind contributions to mine action through tax exemptions for visas, and importing vehicles and equipment for humanitarian operators.²⁴ Clearance operators are, however, required to pay visa fees for expatriates and the previous tax concession of tax exemption for international experts was removed from all MoUs after 2018.²⁵

The Lao government adopted UXO clearance as a ninth Millennium Development Goal in 2010, targeting removal of all UXO from priority agricultural land by 2020.²⁶ This target has not been met, and the nationwide survey to establish the baseline of CMR, including contamination in priority agricultural land, is ongoing. Subsequently, during the Association of Southeast Asian Nations (ASEAN) summit in September 2016, Lao PDR launched sustainable development goal (SDG) 18, "Lives Safe from UXO", which focuses on freeing the country from UXO. The Eighth National Socio-Economic Development Plan (2016–20) also reflected the importance of UXO clearance for realising Lao PDR's development targets.²⁷ In its annual report, the government said that focus in 2019 had been on implementing the UXO Sector National Strategic Plan, Safe Path Forward II, 2011–2020 in order to further the achievement of the Eighth National Socio-Economic Development Plan. Priority was also given to the implementation of the Poverty Eradication Plan, as well as the SDG 18. In addition, the NRA focused on the priority development areas, development projects, and improved agricultural land for Lao ethnic groups.²⁸

The United Nations Development Programme (UNDP) provides programmatic and technical support to the NRA and UXO Lao, including with regard to information sharing and coordination, albeit at a reduced capacity compared to previous years.²⁹ Further capacity development in information management, quality management, and operations support, is provided primarily to UXO Lao, and to a lesser extent the NRA, through a United States (US)-funded grant manager, Tetra Tech.³⁰ In 2020, the Geneva International Centre for Humanitarian Demining (GICHD) is providing support to the development of Lao's new national strategy, information management, and risk management.³¹

There is a UXO Sector Working Group (SWG), led by the chair of the NRA board, and co-chaired by UNDP and the US Ambassador in Vientiane, which meets annually and brings together key stakeholders, including donors, to share information and enhance coordination and resource mobilisation.³² The most recent SWG meeting was convened in August 2020.³³ The NRA planned to diversify the sources of funding throughout the extension period, including engaging the private sector and non-institutional donors. The Lao government also planned to approach new potential donors, such as China, India, and Russia.³⁴

International clearance operators have good cooperation and coordination with the NRA at the national level but also at provincial and district levels. Lack of resources and capacity of some of the provincial NRAs can, however, impact their ability to fulfil their roles. Humanitarian clearance operators are involved in key decision-making processes by the NRA, including through participation in Technical Working Groups (TWGs).³⁵ There have been four TWGs, namely: for survey and clearance, information management, UXO/mine risk education, and victim assistance. The TWGs, which are held regularly, are designed to promote information sharing and progress in the four thematic aspects.³⁶ In addition, following the Second Regional CMRS workshop in 26–30 August 2019, convened by the US Office of Weapons Removal and Abatement (WRA), a fifth, separate CMR survey working group was established, involving clearance operators, and other key stakeholders.³⁷ The survey working group has been collecting data on the depth at which CMR are found.³⁸

The United Kingdom Department for International Development (DFID) grant in 2019 has helped to strengthen cooperation and coordination between clearance operators, with monthly coordination meetings held with HALO, Mines Advisory Group (MAG), and Norwegian People's Aid (NPA).³⁹ Lao PDR also conducted two exchange to Cambodia and Vietnam in September 2019 and February 2020, which were considered very useful by all three national authorities.⁴⁰

Operators were consulted during the elaboration of Lao PDR's 2019 CCM Article 4 extension request.⁴¹ When commenting on the extension request in September 2019, the CCM Article 4 Analysis group recommended the establishment of a country coalition in Lao PDR to enhance coordination in implementing the work plan included in its extension request.⁴²

Despite some efforts by the NRA to clarify the procedure for MoUs, MoU procedures in Lao PDR remain lengthy, complex, and labour-intensive. They continue to cause significant delay and impede the implementation and expansion of survey and clearance, including by preventing the procurement and import of equipment.⁴³ Operators are required to report and secure approval for completed projects before an MoU for a new project can be approved. The lack of an MoU prevents expansion of operations or procurement of new equipment.⁴⁴ Typically it takes a minimum of six months for an MoU to be approved; sometimes it is significantly longer, and the process may even take several years to complete. Unfortunately, some donor funding could not be spent in 2019 due to delays in the MoU process and had to be returned to the donor.⁴⁵ Furthermore, even after formal approval of an MoU, operators may still experience challenges importing necessary equipment⁴⁶ or small items of additional equipment, which require time-intensive MoU amendments.⁴⁷ NPA reported that it took nine months to get three trucks and two 4x4 vehicles released from customs, even with an MoU.⁴⁸

Donors have urged the Government of Lao PDR to facilitate the MOU process, however guidelines continued to change for each MoU process. The NRA acknowledged delays and accepted that improvements could be made on the part of the national and local authorities involved in the MoU process. However, the NRA has said previously that some of the delays are due to incorrect reporting or a failure to follow correct MoU guidelines by clearance operators.⁴⁹ MoUs for The HALO Trust and NPA were finally signed on 21 June 2019.⁵⁰ MoUs with Humanity and Inclusion (HI) and MAG were signed previously.

GENDER AND DIVERSITY

While the NRA has yet to develop a gender and diversity policy, gender is integrated into all core UXO documents including work plans and the national strategy, and relevant mine action data is disaggregated by sex and age. Women are consulted in group discussions as part of survey and clearance activities, but the needs of women and children had yet to be fully taken into account for prioritisation and planning. Of the 41 employees at the NRA, 13 (31%) are women, including three of the nine NRA Officers.⁵¹

Following the establishment of a partnership in 2018 between UN Women, the NRA, and the Lao Women's Union on how to promote gender rights in the UXO sector, a "Manual for Trainers on Gender Mainstreaming in the UXO Sector, Lao PDR" was piloted during a workshop in December 2018 and published in 2019.⁵²

In partnership with government of Lao PDR, ARMAC delivered a Regional Workshop on Gender Equality and Empowerment in ASEAN Mine/ERW Action in October 2019, in Vientiane. The two-day workshop, funded by Canada, with training led by the GICHD, brought together representatives from 10 ASEAN member States to share their experience and approaches to incorporating gender equality and perspectives into their national mine action programmes. Participants were encouraged to analyse their work through a gender lens to consider how projects and activities are implemented and how the priorities and capabilities of women, girls, boys, and men and other diverse groups are accounted for in programme development and design.⁵³

The HALO Trust, HI, MAG, and NPA all reported having gender policies in place, and that they disaggregate mine action data by sex and age, and consult with women and girls during survey and clearance operations.⁵⁴

HALO reported that all its teams are gender balanced and there is equal access to employment for qualified women and men in HALO's survey and clearance teams in Lao PDR. As at the end of 2019, HALO Laos employed 222 female national staff (42%) out of a total of 526, of whom 189 (85%) were employed in operational roles in survey and clearance teams. Of the programme's 20 most senior managerial positions, half were filled by women.⁵⁵

HI provides equal opportunities to employment for qualified women and men in its survey and clearance teams in Lao PDR, and trains and promotes women to managerial positions. HI has mixed non-technical survey teams, with employees of different ethnic origins and persons with disability, including UXO survivors. It has a commitment to ensure that 50% of staff trained/recruited are women, and in 2019–20 was conducting in-house EOD-2 training that involves three women and three men recruited in 2018 for the Houaphanh project. Overall, women account for half of HI's survey and clearance personnel in Lao PDR and half of managerial level/supervisory positions.⁵⁶

MAG employed a weighted application system during its recruitment process for the new DFID grant in early 2019, in order to prioritise groups in Lao society that are traditionally disadvantaged. It devised a scoring system for use during the newly introduced electronic shortlisting process, awarding points for indicators of disadvantage (e.g. single parents/widows, ethnic minorities, those from flood-affected villages, low level of education, and women), helping ensure more members of disadvantaged groups were interviewed. The shortlist scores were also considered alongside the interview scores, helping to offset the disadvantage that individuals with low literacy or little interview experience face. Overall, women account for 37% of operational roles in MAG's survey and clearance teams in Lao PDR and 44% of managerial level/supervisory positions (26% of operational managers and 50% of support managers).⁵⁷

NPA's Lao PDR programme has a Gender Action Plan 2019–20 and in November 2019 a one-day workshop on gender mainstreaming and equality was held for all 350 NPA field staff in Pakse. The training provided staff with an introduction to gender mainstreaming in mine action, including promoting women's leadership in the UXO sector.⁵⁸ NPA also prioritises ethnic and language minorities, and women, as part of its recruitment process. While NPA survey and clearance teams are gender inclusive, they are not yet gender balanced. In 2019, women made up over 26% of NPA Lao PDR's staff members, an increase from 2018. This included 79 women (27%) in a total of 296 operational staff, 9 women (22%) in a total of 40 support staff, and 2 women (25%) in a total of 8 expatriate staff members. Approximately 30% of managerial positions in the programme were held by women.⁵⁹

UXO Lao ensures that all groups affected by CMR contamination, including women and children, are consulted during its survey and community liaison activities. This requirement is included in its standing operating procedures (SOPs). UXO Lao also ensures its survey and community liaison teams are inclusive and gender balanced, to facilitate access and participation from all groups.⁶⁰ UXO Lao reported that it offers employment opportunity to all and is trying to increase the number of women in survey and clearance teams and in management positions.⁶¹ UXO Lao said that it advocates for equality in the workplace and that its human resource policies encourage female applicants at all levels, and has one female unit chief. Of its 1,396 staff employed, 371 (27%) are female, of whom 74% work in the field: seven as team leaders and three as specialist explosive ordnance disposal (EOD) personnel.⁶²

INFORMATION MANAGEMENT AND REPORTING

The national IMSMA database has several data problems, including incorrect or incomplete historical data (mainly that of UXO Lao data stored as hard-copy documents in provincial UXO Lao offices); missing data from the migration to IMSMA; and delays in entering corrected data into the database.⁶³ The NRA has identified the need for better quality control of data in the IMSMA database.⁶⁴ It is reported to be continuing to improve data quality, focusing again on the quality of forms and correcting data errors in 2020.⁶⁵ It has also stressed that upgrading information management systems will be crucial given the greatly increased volume of data resulting from the ongoing nationwide CMRS.⁶⁶ The TWG on information management met quarterly in 2019.⁶⁷

A 2017 report by Sterling International, the former US contractor before Janus and Tetra Tech, said analysis of data in the NRA IMSMA database found errors affecting up to 9,300 entries, or 14% of the 67,000 entries on the database. Sterling believed that the errors could affect 22% of the area recorded in the database as cleared or technically surveyed. The errors included operators' misreporting of coordinates and mistaken entry of reports into IMSMA. Other errors included use of the wrong GPS format or the wrong map datum. The result was to put many tasks in the wrong location. Sterling found that the errors occurred mostly with UXO Lao's work, and mostly between 2004 and 2010, but that it affected "many" organisations.⁶⁸ Efforts to correct historical data within IMSMA (including incorporation of correct current data) are ongoing. It is also important that village-level data corrections made by operators during the nationwide CMRS are updated in IMSMA in a timely manner.⁶⁹

When the organisation conducting the CMRS is different to the one holding historical records, the nationwide CMRS demands good cooperation and timely sharing of data relating to villages between clearance operators. This pertains to historical information on EOD roving tasks, area clearance, and accident data.⁷⁰ Communication between international operators and UXO Lao is continuing to improve. However, while UXO Lao does provide its data on historical tasks to international operators to help inform desktop studies before sending in survey teams, data is often slow to be made available.⁷¹ Delays in the timely provision of historical data by UXO Lao are understood to be partly connected to the lack of an appropriate and clear structure for the granting of permissions for data sharing at the provincial level. UXO Lao reported that it is not permitted to share corrected data not in IMSMA directly with operators, unless approval is granted by the NRA.⁷²

With capacity development support from NPA, revisions to the Information Management (IM) NMAS were submitted to the NRA for consideration in 2019, and will be formally approved once other relevant chapters of NMAS have also been updated. IM SOPs for the NRA, including IM process maps and guidelines, were also drafted and submitted for translation into Lao as well. The UXO sector is said to be positive about the revised draft IM NMAS which better defines the minimum requirements, and roles and responsibilities of different organisations in IM.⁷³

International clearance operators believed there was scope for the data gathering forms to be strengthened to also ensure socio-economic and impact data is also available for use in planning and prioritisation.⁷⁴ As at May 2020, final proposed revisions to IMSMA forms had been accepted by the NRA, but not officially approved yet. Collection of socio-economic data started in June 2020,⁷⁵ but as at August operators had still to receive any revised IMSMA forms with added socio-economic data.

Following additional NPA capacity development in 2019 under DFID funding, four provincial authorities in the south are now in a position to access and use the IMSMA database. The same training package and approach was also used to conduct IMSMA training in the remaining 11 provinces by the NRA.⁷⁶

Operators reported that data submitted to the NRA were typically updated in a timely manner and accurately.⁷⁷ IMSMA VPN was tested from July to September 2018, with technical support from NPA, and was considered successful and subsequently rolled out. As at August 2020, all operators, except for UXO Lao, were using IMSMA VPN.⁷⁸ It has helped improve the accessibility of data, the speed and quality of the data entry, and the reporting process, with crosschecks raising any discrepancies for correction.⁷⁹ However, IMSMA is still not fully accessible to operators, who can only access their own data in the system and have to formally request the additional data.⁸⁰

Expanding the use of IMSMA to support survey planning and the review of all historical operational data (both electronic and paper), will help ensure that non-technical survey is followed up by robust technical survey operations.⁸¹ In addition, the information management system in Lao PDR must also be equipped to record operator conclusion reports, in order to know how many villages have been surveyed.⁸² The NRA's IM unit has a system in place to record conclusion reports, but not all operators submit the information.⁸³

Lao PDR provides regular updates on its progress in Article 4 implementation, both in its annual Article 7 transparency reporting and in statements at the CCM meetings of States Parties. It submitted a timely CCM Article 4 deadline extension request, which was granted at the CCM Ninth Meeting of States Parties in September 2019.

PLANNING AND TASKING

As part of efforts to implement the CCM Vientiane and Dubrovnik Action Plans, the Lao Government adopted “Safe Path Forward II, 2011–20”, a 10-year national strategy for the UXO sector. The strategy’s goal is “to reduce the humanitarian and socio-economic threats posed by UXO to the point where the residual contamination and challenges can be adequately addressed by a sustainable national capacity fully integrated into the regular institutional set-up of the Government.”

Safe Path Forward II was reviewed in June 2015, when the NRA set a number of specific targets for the remaining five years up to 2020.⁸⁴ Many of these were superseded in March 2016 when the NRA issued a landmark paper committing to time-bound nationwide non-technical and technical survey through the CMRS project, with a view to producing Lao PDR’s first baseline estimate of CMR contamination.⁸⁵ There was a corresponding multi-year work plan 2016–20 for implementation of the Safe Path Forward II strategy,⁸⁶ which called for spending on clearance of \$57 million, and targeted clearance for 2017–21 of 45km² a year, considerably in excess of previous clearance rates.⁸⁷

A new national strategic plan for the UXO Sector is being elaborated for 10 years, in line with SDG 18 under the 2030 SDG agenda.⁸⁸ A GICHD-facilitated strategy stakeholder workshop, planned for March 2020 in Vientiane, unfortunately had to be postponed due to the COVID-19 outbreak. As a result of continued travel restrictions related to COVID-19, the GICHD was planning to support the NRA by facilitating an online strategy stakeholder workshop before the end of 2020. This workshop will result in a “theory of change” approach that will provide the foundation for Lao PDR’s new national strategy.⁸⁹ Through its US-funded agreement between Tetra Tech and the NRA, the United States is continuing to “support the Lao Government as it formulates its 10-year National Strategic Plan for the UXO Sector, a plan that will map the path to achieving SDG 18 – the elimination of UXO as a barrier to national development by 2030.”⁹⁰

In a positive development, a first-ever sector-wide annual work plan for Lao PDR for 2018 was developed in an inclusive manner with input from all relevant stakeholders and subsequently approved by the NRA Board.⁹¹ Unfortunately, stakeholders were not brought together to help inform elaboration of the annual sector-wide work plan for 2019, in the same way as for 2018, reportedly due to lack of budget. Instead the ministry collected the data to inform the 2019 plan.⁹² A consultative workshop was, however, held in June 2019 to support the development of the sector-wide work plan for 2020,⁹³ and a workshop was also held in September 2020 with all stakeholders, including UXO Lao and the four international NGOs, to discuss elaboration of a sector-wide work plan for 2021.⁹⁴

In 2018, Lao PDR began a national CMRS baseline survey, with funding from the United States, and the baseline survey is ongoing. The first phase of the survey involves six province-wide surveys (in Attapeu, Champasak, Saravan, Savannakhet, Xekong, and Xiengkhouang) by HALO Trust, MAG, and NPA of all villages suspected or confirmed as CMR-contaminated, according to the NRA’s village list.⁹⁵ In September 2018, Lao PDR announced that three additional contaminated provinces would be added to the national survey plan in 2019 and another five provinces in 2020–21, with the aim to have 14 provinces fully surveyed by end of 2021.⁹⁶ However, survey has fallen behind schedule.⁹⁷

According to Lao PDR’s 2019 Article 4 deadline extension request, “all sector activities are implemented in order to achieve SDG18 “Lives Safe from UXO”, to remove the UXO obstacle to national development and the activities should be implemented in line with the strategic documents and policies”.⁹⁸ The UXO Sector has been further integrated into the national development agenda, such as the National Policy on Rural Development and Poverty Eradication, including the National Socio-Economic Development Plan (2016–20), on the approval of priority development areas.⁹⁹

WORK PLAN ESTIMATES FOR THE EXTENSION REQUEST PERIOD (2020–25)

Lao PDR’s CCM 2019 Article 4 extension request includes a five-year work plan for survey and clearance, with progress dependent on the level of funding it secures. There will be a strong concentration on survey during the extension period, with a focus on the six most contaminated provinces to be completed as soon as possible, followed by the others. Clearance will take place simultaneously with survey activities.¹⁰⁰

Based on existing capacity, over the five-year period of Lao PDR’s extension (1 August 2020–31 July 2025), 25 non-technical survey teams will survey 1,463 cluster munition contaminated villages (292 villages per year), at a total cost of US\$4.5 million and 76 technical survey teams would survey 2,873 villages at a predicted total cost of US\$38 million (US\$7.6 million per year). Re-survey is to be conducted as required, if new evidence of CMR is reported and found.¹⁰¹

As at the end of 2018, more than 9,284 CHAs, equivalent to 858km² in size, had already been identified through the ongoing CMRS and entered into IMSMA, representing several years of clearance efforts based on current clearance capacity. The NRA predicts that the number of CHAs containing CMR will significantly increase during the five-year period of the extension request, at a rate far faster than the CMR-contaminated areas can be cleared.¹⁰²

In its 2019 Article 4 extension request, Lao PDR outlines three different estimates for CMR clearance, based on three different scenarios for available resources. The first outlines predicted clearance output based on existing resources during 2020–25; namely 108 teams, with a total clearance output of 50km² per annum, at a cost of US\$12.5 million per year. This would result in clearance of 250km² at a cost of \$62.5 million, during the five-year extension request period.¹⁰³ This seems highly ambitious, based on current output.

The second estimate predicts clearance output based on the additional resources needed to address the 800km² of CHA already recorded in IMSMA as at end of 2018. This would see annual clearance output incrementally increased from 60km² per annum in 2020 to 280km² per annum in 2024, with total clearance output of 800km² during the five-year extension request period, at a total cost of US\$200 million.¹⁰⁴

The third estimate predicts clearance based on the additional resources needed to address 1,600km² of CHA, which includes the further 800km² of CHA predicted to result from CMRS during the five-year extension request period, at a total cost of US\$400 million.¹⁰⁵

Prioritisation of clearance is a critical step in the land release cycle and a key component of an integrated survey and clearance programme, especially given the large and increasing number of CHAs produced by the ongoing nationwide CMRS. However, at present, there is no comprehensive national-level guidance on the prioritisation of clearance tasks and prioritisation systems and criteria vary markedly between the operators.¹⁰⁶ The co-chairs of the UXO Sector Working Group, the United States and UNDP, believe a prioritisation plan will need to be developed for the entire UXO Sector, including both commercial and humanitarian operators.¹⁰⁷ The sector would benefit from the strengthening of the capacity and participation of the NRA at the provincial level and of district officers from the Labour and Social Welfare authorities. Operators also stressed the need for community participation in the process.¹⁰⁸ The NRA acknowledges difficulties in sector planning and prioritisation by local authorities.¹⁰⁹ Prioritisation workshops commenced in 2019 and continued into 2020, and a plan was currently being developed.¹¹⁰

Under the new DFID contract which commenced in 2019, NPA is assisting the NRA in developing national capacity and creating a nationwide prioritisation matrix, with input from fellow DFID consortium partners, HALO Trust and MAG.¹¹¹ However, due to a delay in the MoU process and the resulting reduction in the implementation timeframe of the DFID capacity development project, the planning and prioritization outputs of the DFID-related work plan were reduced.¹¹² Clearance operators expected the issue of a nationwide prioritisation matrix to gather further traction during 2020. As at August 2020, the prioritisation matrix was still being elaborated.¹¹³

At the micro level, prioritisation of clearance tasks in Lao PDR is in part dictated by the wet and dry seasons. During the dry season, operators are able to access and clear paddy fields, while in the wet season, they focus on clearing grazing and community land.¹¹⁴

LAND RELEASE SYSTEM

STANDARDS AND LAND RELEASE EFFICIENCY

The “Lao PDR UXO Survey Standards” (UXO Survey Standard No. 21/NRA) specify the minimum standards and requirements for the survey of all cluster munition-contaminated areas in Lao PDR.¹¹⁵ The standards were developed in a participatory manner with assistance and input from the mine action community in Lao PDR and were completed in September 2017, before being officially approved by chair of the NRA on 4 July 2018.¹¹⁶ The standards are said to conform to the International Mine Action Standards (IMAS)¹¹⁷ and are fully reflected in the SOPs of clearance operators, who reported that they are well adapted to the local threat and context.¹¹⁸

The NRA plans to formally review the national standards at least every three years, in collaboration with stakeholders, to ensure they evolve to meet changing circumstances and the introduction of new technologies and methodologies.¹¹⁹ MAG said that the NRA had planned to review and revise the national standards in 2020, in collaboration with NGOs, but this was postponed due to the impact of COVID-19.¹²⁰

Prior to 2014, UXO operators in Lao PDR primarily carried out general survey on areas intended for clearance and roving clearance tasks, based on request and reports from villagers.¹²¹ CMRS has resulted in clearance being directed to cluster munition strikes, across land boundaries where necessary, and away from the clearance of areas with low or no CMR contamination. There has been a significant improvement in the number of CMR destroyed per hectare cleared since 2015.¹²² As part of the new CMRS procedure, and the corresponding national standard, non-technical survey is to be carried out on whole villages (i.e. all land within a village boundary), not just individual areas of land, with the aim to identify evidence points for follow-on technical survey. An additional aim during survey is to correct errors or omissions in historical data in IMSMA or in operator files.¹²³

The survey approach has been strengthened over the last couple of years, with more emphasis on the importance of desk assessment of historical data and comprehensive non-technical survey. Technical survey is only carried out based on CMR evidence points and is also conducted on whole villages.¹²⁴ Technical survey works outwards from the initial evidence point, searching no less than 50% of each 50 metre by 50 metre box with a detector, with emphasis on finding a submunition. As soon as a submunition is found, technical survey moves to the adjacent boxes. If cluster munition fragments are found, searching must continue until a submunition is found or at least 50% of the box is covered.¹²⁵

Operators continue to refine their cluster munition survey methodology in a bid to accelerate operations, including using the technique of “skipping boxes”, in which teams finding CMR in one survey box skip one or more of the immediate neighbouring boxes and then survey the next box. Skipping boxes is permitted in the national survey procedure, and where appropriate has now become standard practice for technical survey teams, where the focus is on identifying the boundaries of CHAs.¹²⁶

CHAs are established based on red boxes and include a 50-metre fade-out from the place submunitions are found during technical survey, unless fade-out extends into inaccessible or commercial concession areas (responsibility for survey and clearance in commercial concession areas is then that of the concession holder).¹²⁷

According to the national survey standards, clearance must only be conducted in CHAs, unless either “official agreements with the NRA permit a dispensation” or “the UXO clearance is being paid for by a client and 100% clearance without survey is a requirement of the agreement”.¹²⁸ The NRA maintained the need to retain some flexibility to accommodate donor stipulations which sometimes require

full clearance of UXO in non-CHAs, for development projects such as schools, and there is an official procedure for such instances.¹²⁹ In late 2016, the Prime Minister issued Order No. 43/PM, which stipulates that development projects in provinces and districts affected by UXO must undergo survey and clearance before project implementation, and these development projects must also allocate funding for survey and clearance.¹³⁰

Except in the case of permanently inaccessible land or commercial concession areas, CHAs that are incomplete or have not been created using the technical survey process are not to be entered into IMSMA.¹³¹ Interpretation and understanding as to what constitutes “inaccessible” is not clearly defined and can vary between clearance operators,¹³² but according to the national survey standards, dense vegetation and seasonal flooding are not valid reasons for the non-completion of technical survey.¹³³ Clearance teams deployed to CHAs are required to have the knowledge and necessary equipment to operate in difficult areas such as steep hillsides and dense jungle terrain, which requires strong monitoring mechanisms to ensure that the physical obstacles do not reduce the quality of the survey and clearance work.¹³⁴ The minimum clearance depth in Lao PDR depth is 25cm, which is intended to capture all surface and shallow CMR contamination.¹³⁵ There is said to be recognition of the need for a review of the minimum survey and clearance depth, which currently stands at 25cm. Reviewing empirical data on the depths of submunitions found and their condition (i.e. the degradation factor), would support any review process.¹³⁶

With regard to completion of CHAs/cluster munition footprints, international clearance operators reported difficulty conducting CMRS in certain areas, due to national security or restrictions to access land due to cultural sensitivities and beliefs.¹³⁷ Furthermore, in technical survey tasks in areas of massive contamination, with overlapping strikes, it is not always possible to continue to fade-out, as the confirmed areas extend too far.¹³⁸

OPERATORS AND OPERATIONAL TOOLS

Land release operations in Lao PDR are conducted by a range of implementing partners, which includes humanitarian operators such as the national operator UXO Lao; international NGOs, HALO Trust, HI, MAG, and NPA; commercial clearance operators; and humanitarian teams of the Lao People's Army.¹⁴⁵

With regard to survey capacity in 2019: The Lao Army 58 (humanitarian demining unit) deployed one non-technical survey team, totalling five personnel and four technical survey teams totalling twenty-eight personnel;¹⁴⁶ HALO deployed 2 non-technical survey teams, totalling 4 personnel and 15 technical teams, totalling 134 personnel;¹⁴⁷ HI had 1 non-technical survey team of 2 personnel and 1 technical survey team of 6 personnel;¹⁴⁸ MAG had 4 non-technical survey teams, totalling 19 personnel and 22 technical survey teams, totalling 176 personnel;¹⁴⁹ NPA had 24 CMRS (non-technical survey and technical survey) teams totalling 120 survey personnel (5 searchers per team, excluding team leaders);¹⁵⁰ and UXO Lao had 10 non-technical survey teams totalling 42 personnel (including team leaders) and 16 technical survey teams totalling 177 personnel (including team leaders).¹⁵¹

HI has suggested that as CMRS can be time consuming, clearance could replace CMRS earlier where it is well established that there is CMR contamination, as clearance would cover the entire CHA anyhow, including a 50m buffer zone.¹³⁹ Similarly, in places with severe contamination, UXO Lao is in favour of having the option to forego survey and move directly to clearance.¹⁴⁰

Based on the areas in which it is operational, NPA reported that typically CHAs cover the strike area and submunitions are not being found outside of CHAs polygons during clearance;¹⁴¹ an indication of the effectiveness of evidence-based survey.

MAG uses Evidence Point Polygon (EPP) mapping methodology to support CMRS planning. The technique, pioneered by MAG, uses historical and ongoing operational data from GPS-recorded EOD spot tasks involving submunitions to plot what are termed Initial CHAs (iCHAs). Within the boundaries of iCHAs, including fadeout, no technical survey is required, resulting in time and resources efficiencies. However, in order to be effective, this technique relies on accurate and reliable EOD spot-task data, which is not always available. In areas where MAG is applying EPP mapping, it uses its own EOD data.¹⁴²

According to the NRA, understanding of the CMRS process, especially at the local and field levels, is sometimes limited.¹⁴³ Stakeholders across the mine action sector in Lao PDR agreed on the importance of strengthening coordination with village authorities as an integral component of the survey process, ensuring that communities understand and accept the results of survey. It is especially important that villagers fully understand that, despite demolition of UXO during the CMRS process, CHAs identified through survey remain hazardous until full clearance has taken place, which may not be for many years.¹⁴⁴

Table 2: Operational clearance capacities deployed in 2019¹⁵²

Operator	Manual teams	Total clearance personnel	Machines	Comments
Lao Army 58	5	45	45	Capacity increased to 7 teams from November 2019.
HALO	20	218	0	HALO's clearance capacity increased from 4 to 20 teams from June 2019, due to the DFID funding. Medics are included as HALO has technician medics.
HI	2	10	0	In addition, two drivers are trained in clearance.
MAG	30	240	2	MAG's clearance capacity increased in both Xieng Khouang (11 new teams) and Khammouane (12 new teams) provinces, due to DFID funding. Mechanical assets refer to two JCBs.
NPA	9	108	0	From January-June seven teams were deployed, with two additional teams deployed from July with DFID funding.
UXO Lao	85	850	2*	10 members for each team (1 team leader, 1 deputy team leader, 1 medic, 1 driver, and 6 deminers). *Two Komatsu tracked excavators that have been fitted with an attachment to crush BLU-26s and other small submunition types.
Total		More than 1,471 clearance personnel		

N/K = not known

UXO Lao, the oldest and largest clearance operator in Lao PDR, is a government organisation operating under the Ministry of Labour and Social Welfare,¹⁵³ operating in nine provinces (Attapeu, Champasak, Houaphanh, Khammouane, Luang Prabang, Savannakhet, Saravan, Xekong, and Xiengkhouang).¹⁵⁴ In Luang Prabang, UXO Lao operates with funding from Norway and management support from NPA.¹⁵⁵ A new Director of UXO Lao was appointed in 2019.

The HALO Trust's survey and clearance efforts are focused on Savannakhet province, where in 2019 it operated in the districts of Nong, Phin, Sepon, and Vilabouly, and also expanding operations into Atsaphantong and Phalanxai.¹⁵⁶

HI is conducting survey and clearance in Houaphanh province, where it also provides capacity building support to the provincial NRA, through provision of equipment and training in information management and quality management. HI also conducted a needs assessment mission in Phongsaly Province with the NRA in October 2019, and implements projects in Champasak, Savannakhet and Vientiane Provinces, relating to other fields (such as disability inclusion and health and rehabilitation).¹⁵⁷

MAG is the largest international survey and clearance operator in Lao PDR, and is operational in Xiengkhouang province, in the north, where it is conducting technical survey of all villages as part of the nationwide survey project and Khammouane province in the south where its main focus in 2019 was on surveying 30 priority villages in Boulapha district, one of the most heavily contaminated areas in Lao PDR.¹⁵⁸ In addition to its own teams, MAG subcontracted two NPA technical survey teams from September 2018 to February 2019, in a six-month project under the Norwegian Ministry of Foreign Affairs grant to carry out CMRS in Khammouane province.¹⁵⁹ As at March 2019, MAG had assumed all of the activities under the project and was conducting both survey and clearance.¹⁶⁰

NPA is operational in the four southern and heavily contaminated provinces of Attapeu, Champasak, Saravan, and Xekong. It expanded operations into Champasak from July 2019. As mentioned above, NPA was also subcontracted by MAG to carry out CMRS in Khammouane for six months, after which MAG conducted follow-on clearance of the CHAs created by NPA. This joint, fixed-term project was completed in February 2019. NPA also acts as the project coordinator for Norwegian Ministry of Foreign Affairs' bilateral support to Lao PDR, through UXO Lao's operations in Luang Prabang, in the north of the country.¹⁶¹ In addition to its survey and clearance operations, NPA supports capacity development of the NRA and UXO Lao. NPA increased capacity development support in 2019 under new DFID funding, in particular with respect to information management.¹⁶²

The capacity of the Lao armed forces was increased from five to seven humanitarian demining teams in November 2019, funded by the Lao PDR Ministry of Defence.¹⁶³ According to the NRA, the humanitarian clearance teams of the Lao Army are a valuable asset, conducting survey and clearance in the same way as national and international clearance operators, and with good coordination between the NRA and the army. In addition, the army was being trained to use IMSMA. Lao Army teams (completely separate to the humanitarian teams) not coordinated by the NRA started clearance of UXO to enable construction work on the \$6 billion Laos-China high speed railway.¹⁶⁴

From October 2018 to March 2019, Russian and Lao armed forces worked in partnership to survey and clear 1km² of land in Bolikhamxay province, with equipment supplied by Russia. The partnership project is part of a broader framework of cooperation between the governments and armed forces of the two countries.¹⁶⁵ During October 2018 to March 2019, servicemen from the International Mine Action Centre of the Russian Armed Forces completed joint tasks with members of the U-58 mine clearance team of the Laos People's Army. Russia reporting clearing just over 1km² in Lao PDR, during which 344 items of explosive ordnance were destroyed. As part of the same project, it also reported training 20 deminers from the Lao PDR Army and provided demining equipment.¹⁶⁶ The partnership has continued and in 2020 the Russian and Lao Armed Forces were conducting a joint project in Xiengkhouang province.¹⁶⁷

The use of drones is now permitted to assist CMR operations in Lao PDR, but requires several separate certifications and licenses before approval for an MOU can be sought from the NRA.¹⁶⁸ MAG secured a drone permit in late 2019, but as of June 2020 was not yet using the drone for survey or clearance operations.¹⁶⁹ HI had yet to secure approval from local authorities for the use of drones to secure disposal sites and EOD spot tasks, but was continuing efforts.¹⁷⁰

DEMINER SAFETY

One member of MAG staff was injured in an accident in September 2019 when a BLU3B fuse which was thought to be scrap metal exploded. The quality management (QM) team of the NRA investigated the accident, using an accident collection form. The incident was also thoroughly investigated in line with MAG's SOPs and the findings were shared with the NRA, and other operators were briefed on the incident.¹⁷¹

LAND RELEASE OUTPUTS AND ARTICLE 4 COMPLIANCE

LAND RELEASE OUTPUTS IN 2019

According to NRA figures, total release of CMR in 2019 through humanitarian clearance was nearly 46km², with the destruction of 42,085 submunitions. A further 19km² was released through commercial clearance, with the destruction of 1,742 submunitions. See table 4 below.¹⁷² In addition, 36,313 submunitions were destroyed during spot tasks and survey.¹⁷³

The total combined number of submunitions destroyed during non-technical survey, technical survey, clearance, and spot tasks in 2019 was reported as 80,140.¹⁷⁴

SURVEY IN 2019

A total of more than 245.82km² of CHA containing CMR was identified in 2019 (see Table 3);¹⁷⁵ an increase on the equivalent 210km² of CHA containing CMR identified in 2018 (but which excluded the Lao Army 58 data, which was not available).¹⁷⁶ For the purposes of reporting, the 5,195 submunitions destroyed during non-technical survey and 24,591 submunitions destroyed during technical survey in 2019 are already included in the 36,313 submunitions destroyed during spot tasks, in the NRA's annual UXO sector report for 2019.¹⁷⁷

Table 3: Technical survey of CMR-suspected area in 2019¹⁷⁸

Operator	Area surveyed (m ²)	Area identified (m ²)	Submunitions destroyed	Bombs destroyed	Other UXO destroyed	Mines destroyed
Lao Army 58	1,857,500	387,500	72	0	0	0
HALO Trust	41,907,500	13,223,202	2,860	32	648	1
HI	1,567,500	783,750	92	0	8	0
MAG	164,213,561	167,610,011	13,352	0	33	0
NPA	64,593,000	22,648,964	3,153	4	260	0
UXO Lao	60,575,325	41,169,405	5,062	2	1,172	0
Totals	334,714,386	245,822,832	24,591*	38	2,121	1

* Already included in clearance data totals

As at June 2020, HI had identified 44 suspected minefields in 19 villages, during non-technical survey in Houamuang district of Houaphanh province, where it is currently operating.¹⁷⁹ HI was forced to suspend technical survey of CHAs in early 2019, due to the discovery of landmines during clearance of CHAs. Technical survey of the suspended CHAs only recommenced in late 2019, in areas identified as safe from mines, for example where land was in agricultural use. HI also developed a new “clearance while surveying” (CWS) procedure, to allow for safe release of CMR contamination in areas where there is a potential risk of landmines. CWS involves the commencement of full clearance from the CMR evidence point.¹⁸⁰ HI believes that the NRA should coordinate and organise training, and adjust the standards accordingly, with regard to CMRS in areas also affected by mines.

In 2019, NPA nearly doubled the amount of land covered by technical survey, compared to 2018 (when survey only started in June, due to the delay in adopting the national standard). It concluded survey in 270 villages in 2019, compared to 70 the year before.¹⁸¹

CLEARANCE IN 2019

In 2019, a total of nearly 45.77km² of CMR contamination was cleared by humanitarian NGOs and the humanitarian demining teams of the Lao Army, with the destruction of 42,085 submunitions (see Table 4).¹⁸² This is an increase in the area released through clearance, compared to the equivalent 36.7km² cleared in 2018 (but which excluded the Lao Army 58 data, which was not available).¹⁸³

A further 19.30km² was cleared by commercial operators and non-humanitarian teams of the Lao Army, with the destruction of 1,742 submunitions (see Table 4).¹⁸⁴

Table 4: CMR clearance by humanitarian clearance operators in 2019 (NRA data)¹⁸⁵

	Operator	Area cleared (m ²)	Submunitions destroyed	Bombs	Other UXO destroyed	Mines destroyed
Humanitarian clearance operations	Lao Army 58	692,304	245	0	430	0
	HALO Trust	2,070,187	1,047	2	653	0
	HI	499,043	714	1	14	1
	MAG	9,869,304	6,485	7	1,142	0
	NPA	4,017,895	3,924	0	300	0
	UXO Lao	28,620,390	29,670	20	8,542	3
Sub-totals		45,769,123	42,085	30	11,081	4
Commercial clearance operations	Lao Army	4,207,087	0	0	6	0
	AusLao	11,266,445	20	22	37	0
	Milsearch	415,181	295	0	82	0
	MMG	884,987	76	5	265	0
	OUMMA	205,833	1,339	0	0	0
	PL	2,324,658	12	0	5	0
Sub-totals		19,304,191	1,742	27	395	0
Grand Totals		65,073,314	43,827	57	11,476	4

In addition, a further 36,313 submunitions were destroyed during spot tasks and/or during non-technical survey and technical survey by the Lao Army 58 (217 submunitions), HALO Trust (5,111 submunitions), HI (1,644 submunitions), MAG (15,600 submunitions), Milsearch (8 submunitions), NPA (6,224 submunitions), and UXO Lao (7,509 submunitions), along with 113 bombs, 9,958 other items of UXO, and 34 mines.¹⁸⁶

According to Lao PDR’s Article 7 report, a total of nearly 65km² was cleared in 2019 (see Table 5), across 14 provinces, with the destruction of nearly 79,400 CMR, in addition to 40 mines, 170 big bombs, and 21,055 items of other UXO, during clearance, technical survey, and spot tasks.¹⁸⁷ However, as occurred in previous years, this total includes clearance by the Lao Army (separate to the humanitarian teams) and commercial companies, including many tasks which did not contain CMR. Clearance reported in the provinces of

Luangnamtha and Xaisomboun, which are not reported as being of CMR by Lao PDR, suggests this might be the case for 2019 data too. The figures reported in Lao PDR’s Article 7 report differ slightly to those reported in the NRA’s 2019 UXO Sector Annual Report.¹⁸⁸

The amount of land cleared by UXO Lao in 2019, was a slight decrease on the previous year,¹⁸⁹ while HALO, MAG and NPA all increased the amount of area cleared in 2019, compared to the previous year, due to increased clearance capacity as a result of DFID funding. HALO Trust increased clearance output by around 300% (thanks to an increase from four clearance teams in December 2018 to 20 teams by the end of 2019);¹⁹⁰ MAG increased clearance output by 200% compared to 2018;¹⁹¹ and NPA by over 60% compared to the previous year, which it also attributed to more efficient use of detectors and improvement in team management.¹⁹²

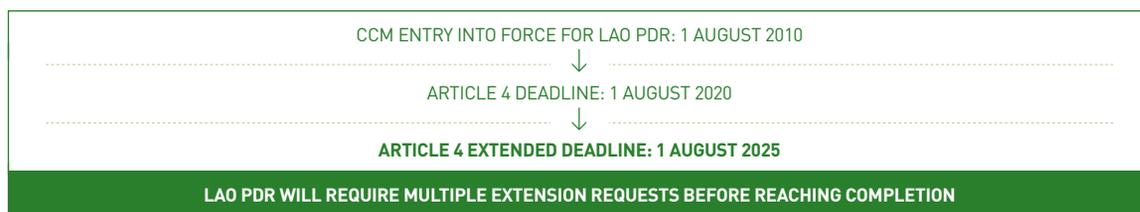
During 2019, NPA piloted the use of new Vallon large-loop detectors for cluster munition survey and clearance as part of efforts to expand the UXO/mine action toolbox and efficiency of operations. Sixty staff were fully trained on the use of these detectors in the field, and initial results showed considerable increases in land release output of up to 50% in certain areas (especially paddy fields). As such, the use of large loop detectors will be expanded throughout NPA's programme in 2020.¹⁹³

All clearance organisations in Lao PDR are required to have a documented internal QM system, covering both quality assurance (QA) and quality control procedures (QC).¹⁹⁴ External QM inspections of clearance organisations are carried out by the NRA.¹⁹⁵ However, the NRA's QM capacity is extremely limited, with only two QM teams to cover sector-wide clearance.¹⁹⁶ The NRA has been seeking funding to increase its QM capacity to four teams.¹⁹⁷

Table 5: CMR clearance by province in 2019¹⁹⁸

Province	Area cleared (m ²)
Attapeu	9,020,372
Bolikhambxay	9,948,568
Champasak	3,002,498
Houaphanh	1,911,402
Khammouane	7,518,270
Luangnamtha	534,070
Luang Prabang	1,153,362
Oudomxay	3,574,921
Saravan	3,081,318
Savannakhet	9,998,173
Vientiane Province	1,250
Xaisomboun	280,680
Xekong	3,056,369
Xiengkhouang	11,869,645
Total	64,950,898

ARTICLE 4 DEADLINE AND COMPLIANCE



Under Article 4 of the CCM, Lao PDR is required to destroy all CMR in areas under its jurisdiction or control as soon as possible, but not later than 1 August 2025, having been granted a five-year extension (the maximum that can be requested per extension request under the CCM) in 2019. Based on current capacity and output, Lao PDR will not reach completion by its deadline and will require multiple extensions to its Article 4 deadline. According to the NRA, based on current resources and land release practices, "progress towards reaching a residual level of contamination as provided for in the CCM is decades away".¹⁹⁹

As at end of 2019, 1,115.5km² of CHA had already been identified through the ongoing nationwide CMRS,²⁰⁰ and as the baseline survey continues the area of confirmed contamination/CHA is expected to continue to increase rapidly. An estimate of the true extent of CMR contamination will not be known until the nationwide CMRS is completed.²⁰¹

Clearance of CMR in Lao PDR will take many years and will require long-term national capacity and funding. According to Lao PDR's 2019 Article 4 extension request, annual clearance output based on current capacity and resources available is approximately 50km² per year on average,²⁰² but annual humanitarian clearance output over the last five years has been significantly less (see Table 6).

Table 6: Five-year summary of CMR clearance

Year	Area cleared (km ²)
2019	45.77
2018	36.20
2017	33.02
2016	30.17
2015*	41.30
Total	186.46

*2014–15 were transition years from request-based to evidence-based clearance, and so include a higher proportion of clearance of land that did not contain CMR.

The NRA has highlighted the challenges in balancing resources for survey and clearance. While nationwide CMRS is essential to quantify the extent of actual contamination in Lao PDR, there is also a need for follow-on clearance in priority areas, which also demands significant resources.²⁰³ Commencement of DFID-funded clearance operations in Lao PDR in 2019 has helped increase clearance output of HALO Trust, MAG, and NPA. In addition, the United States has planned to support increased clearance capacity of both international clearance operators and UXO Lao,²⁰⁴ which MAG and NPA reported will result in an increase in their clearance capacity in 2021.²⁰⁵

In its Article 7 report covering 2019, Lao PDR reports the need to expand and increase the capacity of the Lao PDR Army teams.²⁰⁶ It is only in the past few years that the Government of Lao PDR has allocated funds in its budget for UXO clearance, directed to the Lao Army dedicated teams.²⁰⁷

Lao PDR has identified several challenges in Article 4 implementation. These include insufficient funding (in particular to the NRA and UXO Lao), and the need to strengthen coordination and collaboration among sector stakeholders in order to increase effectiveness and efficiency of the mine action sector in Lao PDR.²⁰⁸ Existing clearance

capacity is not sufficient to address the area of CHA identified for clearance through the ongoing nationwide CMRS. Furthermore, because the number of CMR found per hectare during clearance is now much higher, thanks to application of evidence-based land release methodology, more explosives are needed for the destruction of CMR. This increases operational costs as explosives in Lao PDR are reportedly among the most expensive in the region.²⁰⁹

In addition to insufficient clearance capacity, in its Article 7 report covering 2019, Lao PDR also cites mountainous terrain; unpredictable funding; and outdated clearance equipment as other challenges (e.g. in distinguishing between CMR and scrap metal) and the national authorities highlight the need for more advanced clearance equipment and vehicles.²¹⁰

As mentioned previously, and currently impacting HI's operations in Houaphanh province, discovery of mines during CMRS significantly impedes operations.²¹¹ Other operational challenges in clearance tasks include heavy rains during the wet season; high scrap-metal contamination and fragmentation from other UXO; difficulty accessing tasks due to flooding and vehicles getting stuck in the mud; and the proximity of high-voltage pylons and power lines.²¹²

PLANNING FOR RESIDUAL RISK AFTER COMPLETION

Lao PDR is still determining the extent of its baseline of CMR contamination and is many years from completion, but planning for sustainable national capacity to address previously unknown cluster munition contamination following completion (i.e. residual contamination) will be essential.

- 1 Lao PDR Convention on Cluster Munitions Article 4 deadline Extension Request 2019 (hereafter, CCM Extension Request 2019), Part B, Detailed Narrative, p. 5.
- 2 Interview with Phoukhieo Chanthasomboune, (then) Director, National Regulatory Authority (NRA), Vientiane, 4 May 2016; and NRA, "From Survey to Safety, Quantifying and Clearing UXO Contamination in Lao PDR", March 2016.
- 3 "US bombing records in Laos, 1964-73, Congressional Record", 14 May 1975.
- 4 Article 7 Report (covering 2019), Form F. However, Lao PDR also reported CMR clearance in Luangnamtha and Xaisomboun provinces in 2019, which are not listed as being CMR contaminated.
- 5 CCM Extension Request 2019, Part B, Detailed Narrative, pp. 1 and 5; and Executive Summary, p. 1.
- 6 Email from Mark Frankish, Chief Technical Advisor UXO Unit, UNDP, 26 August 2020. According to the foreword of the 2019 UXO Sector Annual Report, p. iii, a total of 102,112 hectares (1,021km²) of CHA had been identified and registered in the database, but no date was specified.
- 7 Email from Mark Frankish, UNDP, 26 August 2020.
- 8 Interview with Phoukhieo Chanthasomboune, NRA, in Geneva, 7 February 2019.
- 9 CCM Extension Request 2019, Part B, Detailed Narrative, pp. 1, 9, and 24; and Executive Summary, pp. 2 and 4-6.
- 10 Email from Mark Frankish, UNDP, 26 August 2020.
- 11 CCM Extension Request 2019, Part B, Detailed Narrative, pp. 3 and 5; and Executive Summary, p. 4; and Article 7 Report (covering 2019), Form F.
- 12 CCM Extension Request 2019, Part B, Detailed Narrative, pp. 1 and 5.
- 13 *Ibid.*, p. 1.
- 14 CCM Extension Request 2019, Executive Summary, p. 5; and Part B, Detailed Narrative, p. 23.
- 15 2019 UXO Sector Annual Report, NRA, undated, Foreword by US Ambassador and UNDP Resident Representative, Co-Chairpersons of the UXO Sector Working Group, p. iv.
- 16 Email from Mark Frankish, UNDP, 26 August 2020.
- 17 CCM Extension Request 2019, pp. 8 and 9; and Executive Summary, pp. 2 and 4.
- 18 CCM Extension Request 2019, Part B, Detailed Narrative, Part B, Detailed Narrative, p. 1.
- 19 *Ibid.*, p. 18.
- 20 Government Decree no. 67, dated 12 February 2018; CCM Extension Request 2019, Part B, Detailed Narrative, p. 17; and Statement of Lao PDR on National Implementation Efforts, CCM Eighth Meeting of States Parties, Geneva, 3 September 2018.
- 21 CCM Extension Request 2019, Part B, Detailed Narrative, p. 18.
- 22 *Ibid.*, p. 26.
- 23 Email from Olivier Bauduin, US PMWRA, 29 September 2020.
- 24 Article 7 Report (covering 2019), Form I.
- 25 Email from Katherine Harrison, NPA, 9 September 2020.
- 26 "Laos: new MDG to tackle UXOs", IRIN, 12 November 2010.
- 27 Statement of Lao PDR on National Implementation Efforts, CCM Seventh Meeting of States Parties, Geneva, 4-5 September 2017; CCM 8MSP, Laos Universalisation statement; and CCM Extension Request 2019, Part B, Detailed Narrative, p. 4.
- 28 2019 UXO Sector Annual Report, NRA, undated, Foreword by Khampheng Saysompheng, Minister of Labour and Social Welfare, Chairperson of the NRA, p. iii.
- 29 Interview with Olivier Bauduin, (then) UNDP, Vientiane, 2 May 2018; and email, 10 July 2018.
- 30 Email from Nigel Orr, Technical Advisor Survey and Clearance, Tetra Tech, 14 June 2019; and "US Renews Partnership with Lao PDR to Build Capacity in UXO Sector", US Embassy in Lao PDR, 31 January 2020, at: bit.ly/2LzmG8J.
- 31 Email from Robert White, Advisor, Strategic Management & Residual Contamination, GICHD, 22 July 2020.
- 32 Interview with Phil Bean, US PMWRA, and Olivier Bauduin, (then with) Sterling International, in Geneva, 14 February 2018; CCM Extension Request 2019, Part B, Detailed Narrative, pp. 4 and 25; and email from Blossum Gilmour, Programme Manager, MAG, 21 March 2019.
- 33 Email from Amanda Shiel, UXO Unit Programme and Partnership Support Officer, UNDP, 4 September 2020.
- 34 CCM Extension Request 2019, Part B, Detailed Narrative, p. 7.
- 35 Emails from Simon Rea, Regional Director, South and South East Asia, MAG, 17 June 2020; Katherine Harrison, Programme Coordinator, NPA, 6 May 2020; and Cameron Imber, Programme Manager, HALO, 7 April 2020.
- 36 CCM Extension Request 2019, Part B, Detailed Narrative, p. 25.
- 37 Emails from Katherine Harrison, NPA, 6 May 2020; and Cameron Imber, HALO, 7 April 2020.
- 38 Email from Katherine Harrison, NPA, 9 September 2020.
- 39 Email from Simon Rea, MAG, 17 June 2020.
- 40 Email from Katherine Harrison, NPA, 6 May 2020.
- 41 Email from Fiona Kilpatrick, HALO Trust, 29 March 2019.
- 42 Statement of the Article 4 Analysis Group (Netherlands, Peru and Sweden) on conclusions of the extension request by Lao PDR, 9th Meeting of States Parties to the Convention on Cluster Munitions, Geneva, 2 September 2019.
- 43 Interviews with international operators, Lao PDR, 1-12 May 2018, and emails from Fiona Kilpatrick, HALO Trust, 29 March 2019; Blossum Gilmour, MAG, 21 March 2019; Aubrey Sutherland, Country Director, NPA, 25 March 2019; and Katherine Harrison, NPA, 6 May 2020.
- 44 Interviews with international operators, Laos, 1-12 May 2018.
- 45 Email from Katherine Harrison, NPA, 9 September 2020.
- 46 Interviews with international operators, Lao PDR, 1-12 May 2018.
- 47 Email from Julien Kempeneers, Humanitarian Mine Action Coordinator, on behalf of Yvon Le Chevanton, Technical Survey/Clearance Operations Manager, HI, 25 March 2020.
- 48 Email from Katherine Harrison, NPA, 9 September 2020.
- 49 Emails from Bouala Thongsavanh, NRA, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018; and interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
- 50 Emails from Miles Hawthorn, HALO, 23 June 2019; and Katherine Harrison, NPA, 6 May 2020.
- 51 Email from Mark Frankish, UNDP, 26 August 2020.
- 52 UN Lao PDR, "Training of Trainer's Workshop Promotes Gender Equality in UXO Sector", 13 December 2018, available at: bit.ly/3haKMnB.
- 53 ASEAN Regional Mine Action Center (ARMAC), Annual Report 2019, p. 17.
- 54 Emails from Fiona Kilpatrick, HALO Trust, 29 March 2019; Blossum Gilmour, MAG, 21 March 2019; Aubrey Sutherland, NPA, 25 March 2019; Julien Kempeneers, HI, 22 March 2019; and Saomany Manivong, Chief of Programme Office and Public Information, UXO Lao, 10 May 2019.
- 55 Email from Cameron Imber, HALO, 7 April 2020.
- 56 Email from Julien Kempeneers, HI, 25 March 2020.
- 57 Email from Simon Rea, MAG, 17 June 2020.
- 58 Email from Katherine Harrison, NPA, 6 May 2020.
- 59 *Ibid.*
- 60 Email from Saomany Manivong, UXO Lao, 10 May 2019.
- 61 *Ibid.*
- 62 Email from Saomany Manivong, UXO Lao, 3 August 2020.
- 63 Emails from Bouala Thongsavanh, NRA, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018; and Aubrey Sutherland, NPA, 25 March 2019; NRA, draft "Lao PDR UXO Survey Procedures", 20 September 2017; interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018; and interview with Hugh Hosman and Marco Heuscher, (then with) Sterling International, Vientiane, 2 May 2018.
- 64 CCM Extension Request 2019, Part B, Detailed Narrative, p. 4.
- 65 Email from Mark Frankish, UNDP, 26 August 2020.
- 66 CCM Extension Request 2019, Executive Summary, p. 1; CCM Extension Request 2019, Part B, Detailed Narrative, p. 6; and CCM Article 7 Report (covering 2019), Form F.
- 67 Emails from Cameron Imber, HALO, 7 April 2020; Simon Rea, MAG, 17 June 2020; and Julien Kempeneers, HI, 25 March 2020.
- 68 "Data errors on IMSMA", Nigel Orr, Technical Adviser, (then with) Sterling International, 26 April 2017.
- 69 Presentation by HALO Trust, Sepon, 10 May 2018.
- 70 NRA, draft "Lao PDR UXO Survey Procedures", 20 September 2017, p. 26; and Statement of Lao PDR on International Cooperation and Assistance, CCM Seventh Meeting of States Parties, Geneva, 4-5 September 2017; interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018; and interviews with national and international clearance operators, Laos, 1-12 May 2018.

- 71 Emails from Fiona Kilpatrick, HALO Trust, 29 March 2019; and Blossum Gilmour, MAG, 21 March 2019.
- 72 Email from Saomany Manivong, UXO Lao, 28 September 2020.
- 73 Emails from Katherine Harrison, NPA, 6 May and 9 September 2020.
- 74 Emails from Fiona Kilpatrick, HALO Trust, 29 March 2019; Blossum Gilmour, MAG, 21 March 2019; and Aubrey Sutherland, NPA, 25 March 2019.
- 75 Email from Katherine Harrison, NPA, 9 September 2020.
- 76 Emails from Katherine Harrison, NPA, 6 May and 9 September 2020.
- 77 Ibid.; and emails from Cameron Imber, HALO, 7 April 2020; and Julien Kempeneers, HI, 25 March 2020.
- 78 Email from Mark Frankish, UNDP, 26 August 2020.
- 79 Emails from Katherine Harrison, NPA, 6 May 2020; Simon Rea, MAG, 17 June 2020; Cameron Imber, HALO, 7 April 2020; and Julien Kempeneers, HI, 25 March 2020.
- 80 Emails from Cameron Imber, HALO, 7 April 2020; Julien Kempeneers, HI, 25 March 2020; and Katherine Harrison, NPA, 9 September 2020.
- 81 CCM Extension Request 2019, Part B, Detailed Narrative, p. 3.
- 82 Interview with Phil Bean, US PMWRA, in Geneva, 6 February 2018.
- 83 Email from Mark Frankish, UNDP, 26 August 2020.
- 84 Interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 4 May 2016.
- 85 NRA, "From Survey to Safety, Quantifying and Clearing UXO Contamination in Lao PDR", March 2016.
- 86 CCM Extension Request 2019, Part B, Detailed Narrative, p. 26.
- 87 "Survey and clearance plan for UXO/mine action sector in Lao PDR, 2017-2021".
- 88 Email from Olivier Bauduin, US PMWRA, 29 September 2020.
- 89 Email from Ása Massleberg, GICHD, 23 September 2020.
- 90 "US Renews Partnership with Lao PDR to Build Capacity in UXO Sector", US Embassy in Lao PDR, 31 January 2020.
- 91 Email from Bouala Thongsavanh, NRA, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018; and interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
- 92 Interview with Phoukhieo Chanthasomboune, NRA, in Geneva, 7 February 2019.
- 93 Email from Amanda Shiel, UNDP, 4 September 2020.
- 94 Email from Olivier Bauduin, US PMWRA, 29 September 2020.
- 95 Statement of Lao PDR on International Cooperation and Assistance, CCM Seventh Meeting of States Parties, Geneva, 4-5 September 2017; and interview with Phil Bean, US PMWRA, and Machut Shishak, Political/Economic Counselor, US Embassy, Vientiane, 3 May 2018.
- 96 Statement of Lao PDR on National Implementation Efforts, CCM Eighth Meeting of States Parties, Geneva, 3 September 2018.
- 97 Interview with Phoukhieo Chanthasomboune, NRA, in Geneva, 7 February 2019.
- 98 CCM Extension Request 2019, Part B, Detailed Narrative, p. 26.
- 99 CCM Extension Request 2019, Executive Summary, p. 3; and Part B, Detailed Narrative, p. 4.
- 100 2019 UXO Sector Annual Report, NRA, undated, p. 14.
- 101 CCM Extension Request 2019, Executive Summary, p. 4; and Part B, Detailed Narrative, p. 21.
- 102 CCM Extension Request 2019, Executive Summary, pp. 1, 4, and 6; and Part B, Detailed Narrative, pp. 22 and 25.
- 103 CCM Extension Request 2019, Executive Summary, p. 4; and Part B, Detailed Narrative, pp. 7 and 22.
- 104 Ibid.
- 105 Ibid.
- 106 Interviews with national and international clearance operators, Laos, 1-12 May 2018.
- 107 2019 UXO Sector Annual Report, NRA, undated, Foreword by US Ambassador and UNDP Resident Representative, Co-Chairpersons of the UXO Sector Working Group, p. iv.
- 108 Interviews with international operators, UNDP, and US Embassy in Vientiane, Lao PDR, 1-12 May 2018.
- 109 Email from Bouala Thongsavanh, Assistant to the Director of the NRA, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018.
- 110 Email from Mark Frankish, UNDP, 26 August 2020.
- 111 Emails from Fiona Kilpatrick, HALO Trust, 29 March 2019; and Aubrey Sutherland, NPA, 25 March 2019; and interview with Phoukhieo Chanthasomboune, NRA, in Geneva, 7 February 2019.
- 112 Emails from Katherine Harrison, NPA, 6 May 2020; and Simon Rea, MAG, 17 June 2020.
- 113 Email from Mark Frankish, UNDP, 26 August 2020.
- 114 Interviews with international and national operators, Laos, 1-12 May 2018.
- 115 NRA, draft "Lao PDR UXO Survey Procedures", 20 September 2017; and CCM Extension Request 2019, Executive Summary, p. 3.
- 116 Emails from Olivier Bauduin, UNDP, 10 July 2018; and Nigel Orr, (then with) Janus Global Operations, 13 July 2018; Interviews with international operators, Lao PDR, 1-12 May 2018; and Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018; and Statement of Lao PDR on National Implementation Efforts, CCM Eighth Meeting of States Parties, Geneva, 3 September 2018.
- 117 CCM Extension Request 2019, Executive Summary, p. 2; CCM Extension Request 2019, Part B, Detailed Narrative, pp. 9 and 17.
- 118 Emails from Email from Cameron Imber, HALO, 7 April 2020; Simon Rea, MAG, 17 June 2020; Katherine Harrison, NPA, 6 May 2020; and Saomany Manivong, UXO Lao, 10 May 2019.
- 119 CCM Extension Request 2019, Part B, Detailed Narrative, p. 18.
- 120 Email from Simon Rea, MAG, 17 June 2020.
- 121 Interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
- 122 CCM Extension Request 2019, Executive Summary, p. 2; and Part B, Detailed Narrative, p. 9.
- 123 NRA, draft "Lao PDR UXO Survey Procedures", 20 September 2017.
- 124 Ibid.
- 125 Ibid.
- 126 Ibid., p. 17.; Interviews with Neil Arnold, MAG, Phonsavanh, 6 May 2018, and Robby Dehondt, (then with) Sterling International, Sepon, 11 May 2018; and email from Ulric Eriksson, NPA, 1 May 2018.
- 127 NRA, draft "Lao PDR UXO Survey Procedures", 20 September 2017.
- 128 Ibid.
- 129 Interviews with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018 and 7 February 2019, Geneva.
- 130 Statement of Lao PDR on National Implementation Efforts, CCM Seventh Meeting of States Parties, Geneva, 4-5 September 2017.
- 131 NRA, draft "Lao PDR UXO Survey Procedures", 20 September 2017.
- 132 Interviews with international operators, Laos, 1-12 May 2018.
- 133 NRA, draft "Lao PDR UXO Survey Procedures", 20 September 2017.
- 134 CCM Extension Request 2019, Executive Summary, p. 5; and Part B, Detailed Narrative, pp. 24-25.
- 135 CCM Extension Request 2019, Part B, Detailed Narrative, p. 17.
- 136 Emails from Cameron Imber, HALO, 7 April 2020; Julien Kempeneers, on behalf of Yvon Le Chevanton, HI, 25 March 2020; and Katherine Harrison, NPA, 9 September 2020.
- 137 Interviews with Ulric Eriksson, NPA Laos, Saravan, 4 May 2018; and Olivia Meader, HALO Trust, Sepon, 11 May 2018.
- 138 Interview with Neil Arnold, MAG, Phonsavanh, 6 May 2018.
- 139 Email from Julien Kempeneers, on behalf of Yvon Le Chevanton, HI, 25 March 2020.
- 140 Email from Saomany Manivong, UXO Lao, 10 May 2019.
- 141 Email from Katherine Harrison, NPA, 6 May 2020.
- 142 Interview with Neil Arnold, MAG, Phonsavanh, 6 May 2018.
- 143 Email from Bouala Thongsavanh, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018.
- 144 Response to Mine Action Review questionnaire from Olivia Meader, HALO Trust, 11 May 2018; and interview with Olivier Bauduin, UNDP, Vientiane, 2 May 2018.
- 145 CCM Extension Request 2019, Part B, Detailed Narrative, p. 20.
- 146 Email from Mark Frankish, UNDP, on behalf of the NRA, 26 August 2020.
- 147 Email from Cameron Imber, HALO, 7 April 2020.
- 148 Email from Julien Kempeneers, HI, 25 March 2020.
- 149 Email from Simon Rea, MAG, 17 June 2020.
- 150 Email from Katherine Harrison, NPA, 6 May 2020.

- 151 Email from Saomany Manivong, UXO Lao, 3 August 2020.
- 152 Emails from Mark Frankish, UNDP, 26 August 2020; Amanda Shiel, UNDP, 4 September 2020; Cameron Imber, HALO, 7 April 2020; Julien Kempeneers, HI, 25 March 2020; Simon Rea, MAG, 17 June 2020; Katherine Harrison, NPA, 6 May 2020; and Saomany Manivong, UXO Lao, 3 August 2020.
- 153 Presentation by Saomany Manivong, UXO Lao, Vientiane, 2 May 2018.
- 154 Email from Saomany Manivong, UXO Lao, 3 August 2020.
- 155 Email from Katherine Harrison, NPA, 9 September 2020.
- 156 Email from Cameron Imber, HALO, 7 April 2020.
- 157 Emails from Julien Kempeneers, HI, 25 March 2020.
- 158 Emails from Blossum Gilmour, MAG, 21 March 2019; and Greg Crowther, MAG, 21 June 2019.
- 159 Emails from Blossum Gilmour, 21 March 2019 and Greg Crowther, MAG, 21 June 2019.
- 160 Email from Greg Crowther, MAG, 21 June 2019.
- 161 Email from Katherine Harrison, NPA, 6 May 2020.
- 162 Email from Aubrey Sutherland, NPA, 25 March 2019.
- 163 Email from Amanda Shiel, UNDP, 4 September 2020; and 2019 UXO Sector Annual Report, NRA, undated, Foreword by US Ambassador and UNDP Resident Representative, Co-Chairpersons of the UXO Sector Working Group, p. iv.
- 164 Souksakhone Vaenko, "Army deployed to clear UXO for Laos-China railway", Vientiane Times, 6 January 2017; and email from Bouala Thongsavanh, NRA, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018.
- 165 "Laos, Russia cooperate in clearing unexploded ordnance in central Laos", Xinhua, 13 November 2019; and Lao People's Army, "Lao-Russian Armies Joint Operation Committees for UXO clearance meet to review achievements", 9 March 2019.
- 166 Russia's Convention on Certain Conventional Weapons (CCW) Protocol V Article 10 Report (covering 2019); and Russian Ministry of Defence, "International Mine Action Centre squad completes humanitarian demining of Laos", 30 March 2020, at: bit.ly/3182CCS.
- 167 Email from Mark Frankish, UNDP, 26 August 2020.
- 168 Email from Katherine Harrison, NPA, 6 May 2020.
- 169 Email from Simon Rea, MAG, 17 June 2020.
- 170 Email from Julien Kempeneers, HI, 25 March 2020.
- 171 Emails from Simon Rea, MAG, 17 June 2020; and Mark Frankish, UNDP, 26 August 2020.
- 172 2019 UXO Sector Annual Report, NRA, undated, pp. 5 and 7.
- 173 Ibid., p. 6.; and email from Amanda Shiel, UNDP, 25 September 2020.
- 174 2019 UXO Sector Annual Report, NRA, undated, p. 7; and email from Amanda Shiel, UNDP, 25 September 2020.
- 175 2019 UXO Sector Annual Report, NRA, undated, p. 6.
- 176 Emails from Blossum Gilmour, MAG, 21 March 2019; Julien Kempeneers, HI, 22 March 2019; Aubrey Sutherland, NPA, 25 March 2019; Fiona Kilpatrick, HALO Trust, 29 March 2019; and Saomany Manivong, UXO Lao, 10 May 2019.
- 177 2019 UXO Sector Annual Report, NRA, undated, pp. 6 and 7; and email from Amanda Shiel, UNDP, 25 September 2020.
- 178 2019 UXO Sector Annual Report, NRA, undated, p. 6. In some instances, survey data for 2019 provided by operators differed to that reported by the NRA in its annual report. HALO Trust reported surveying over 45.78km², identifying nearly 13.38km², and destroying 3,946 submunitions and 1,285 other UXO (email from Cameron Imber, HALO, 7 April 2020); HI reported surveying over 1.80km², identifying more than 0.78km², and destroying 102 submunitions and 8 other UXO (email from Julien Kempeneers, HI, 25 March 2020). HI figures exclude technical survey of incomplete CHAs where operations were suspended due to the discovery of landmines; MAG's reported data corresponded to the NRA's, except that MAG reported clearing 1,427 items of other UXO (email from Simon Rea, MAG, 17 June 2020); NPA reported surveying over 63.67 km², identifying nearly 22.65km², and destroying 5,520 submunitions and 125 other UXO (email from Katherine Harrison, NPA, 6 May 2020); UXO Lao reported surveying nearly 63.74km², identifying nearly 43.70km², and destroying 5,278 submunitions and 1,218 other UXO (email from Saomany Manivong, UXO Lao, 3 August 2020).
- 179 Email from Julien Kempeneers, HI, 29 June 2020.
- 180 Email from Julien Kempeneers, HI, 25 March 2020.
- 181 Emails from Katherine Harrison, NPA, 6 May and 9 September 2020.
- 182 2019 UXO Sector Annual Report, NRA, undated, pp. 5 and 7.
- 183 Ibid., p. 7.
- 184 Ibid.
- 185 Ibid., pp. 5 and 7. HALO Trust reported clearing more than 2.78km² and destroying 2,005 submunitions, 826 other UXO, and 3 anti-personnel mines (email from Cameron Imber, HALO, 28 August 2020); HI reported clearing nearly 0.50km² and destroying 720 submunitions, 15 other UXO, and 1 anti-personnel mine (email from Julien Kempeneers, HI, 25 March 2020); NPA reported clearing nearly 4.19km² and destroying 4,257 submunitions and 299 other UXO (email from Katherine Harrison, NPA, 6 May 2020); UXO Lao reported clearing nearly 28.60km² and destroying 31,693 submunitions, 9,2017 other UXO, and 2 anti-personnel mines (email from Saomany Manivong, UXO Lao, 3 August 2020).
- 186 2019 UXO Sector Annual Report, NRA, undated, p. 6; and email from Amanda Shiel, UNDP, 25 September 2020. HALO Trust reported destroying 1,146 submunitions during spot tasks in 2019; HI 1,644 submunitions; MAG 2,195 submunitions; NPA 806 submunitions; and UXO Lao 8,132 submunitions (emails from Cameron Imber, HALO, 7 April 2020; Julien Kempeneers, HI, 25 March 2020; Simon Rea, MAG, 17 June 2020; Katherine Harrison, NPA, 6 May 2020; and Saomany Manivong, UXO Lao, 3 August 2020).
- 187 Article 7 Report (covering 2019), Form F.
- 188 2019 UXO Sector Annual Report, NRA, undated, pp. 5-7.
- 189 Email from Saomany Manivong, UXO Lao, 3 August 2020.
- 190 Email from Cameron Imber, HALO, 7 April 2020.
- 191 Email from Simon Rea, MAG, 17 June 2020.
- 192 Email from Katherine Harrison, NPA, 6 May 2020.
- 193 Ibid.
- 194 NRA, draft "Lao PDR UXO Survey Procedures", 20 September 2017.
- 195 Ibid.
- 196 Email from Mark Frankish, UNDP, 26 August 2020.
- 197 Interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
- 198 Article 7 Report (covering 2019), Form F. There appears to be a small error in the Article 7 report table, the total of which actually sums to 64,950,898m², not 64,950,896m².
- 199 CCM Extension Request 2019, Executive Summary, p. 1; Part B, Detailed Narrative, p. 5; and Statement of Lao PDR, CCM Eighth Meeting of States Parties, Geneva, 3-5 September 2018.
- 200 Email from Mark Frankish, UNDP, 26 August 2020.
- 201 Interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
- 202 CCM Extension Request 2019, Executive Summary, p. 3.
- 203 Statement of Lao PDR, CCM Seventh Meeting of States Parties, Geneva, 4-5 September 2017; email from Bouala Thongsavanh on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018; and interview with Phoukhieo Chanthasomboune, NRA, in Geneva, 7 February 2019.
- 204 Interview with Olivier Bauduin, US PMWRA, in Geneva, 13 February 2020.
- 205 Emails from Katherine Harrison, NPA, 6 May 2020; and Simon Rea, MAG, 17 June 2020.
- 206 CCM Article 7 Report (covering 2019), Form F.
- 207 Sweet, "Prioritisation policy, procedures and practices relating to UXO clearance in Lao PDR".
- 208 Statement of Lao PDR on National Implementation Efforts, CCM Eighth Meeting of States Parties, Geneva, 3 September 2018.
- 209 CCM Extension Request 2019, Executive Summary, p. 5; and Part B, Detailed Narrative, pp. 24-25.
- 210 CCM Article 7 Report (covering 2019), Form F.
- 211 Email from Julien Kempeneers, HI, 25 March 2020.
- 212 Presentation by HALO Trust, Sepon, 10 May 2018.