

LAO PEOPLE'S DEMOCRATIC REPUBLIC

ARTICLE 4 DEADLINE: 1 AUGUST 2020
(NOT ON TRACK TO MEET DEADLINE)

PROGRAMME PERFORMANCE	2017	2016
Problem understood	6	5
Target date for completion of cluster munition clearance	5	5
Targeted clearance	8	7
Efficient clearance	7	6
National funding of programme	5	5
Timely clearance	5	5
Land-release system in place	7	5
National mine action standards	7	7
Reporting on progress	7	6
Improving performance	7	6
PERFORMANCE SCORE: AVERAGE	6.4	5.7

PERFORMANCE COMMENTARY

The national mine action programme in the Lao People's Democratic Republic (Lao PDR) made solid progress in 2017, particularly in formalising procedures and plans for the national cluster munition remnant survey (CMRS) that began in 2018 and which will form the basis for longer-term planning and prioritisation of clearance. Acceptance and adoption of an evidence-based methodology to survey and clear cluster munition remnants (CMR), in line with international best practice, is an improvement on the request- and response-based system of the past.

The development and approval of a first-ever mine action sector-wide annual workplan for Lao PDR (for 2018), is an important step forward, as too was the announcement and completion of the long-awaited revised "Lao PDR UXO Survey Standards" for CMRS. The standards, completed in late 2017, were formally approved in July 2018.

Progress continued in cleaning-up the many historical errors in the Information Management System for Mine Action (IMSMA) database, largely relating to UXO Lao data, and which impede efficient implementation of the national baseline survey of CMR contamination now underway. However, evidence of falsification of UXO Lao data also came to light in 2017; this is subject to internal and external investigation.

RECOMMENDATIONS FOR ACTION

- The National Regulatory Authority (NRA) should strengthen guidance on the prioritisation processes and criteria for CMR clearance tasks, in order to effectively address the large number of confirmed hazardous areas (CHA) being generated by the national CMRS.
- The NRA should continue to develop and expand its provincial-level capacity, and the NRA and clearance operators should strengthen coordination with provincial, district and village-level authorities during implementation and planning of CMRS and clearance.
- The NRA should maintain efforts to address inaccurate and incomplete historical data in the IMSMA database, including making full use of the data correction tool developed by Sterling International.
- Improved cooperation and coordination is needed between clearance operators. In particular, national operator, UXO Lao, should ensure its data for historic tasks are made available to international operators as and when needed, to help inform survey and clearance operations.
- Procedures for issuing or renewing Memoranda of Understanding (MoU) should be streamlined, standardised, and made transparent, to avoid inefficiencies and excessive delays.
- Operators should ensure that the local communities fully understand the CMRS process and outputs, in particular through community liaison. This should clarify that technical survey is not the same as clearance, and that CHAs identified during the CMRS remain hazardous until the land is cleared.
- The NRA should seek to expand its external quality management (QM) capacity.
- Lao PDR should consider expanding the clearance capacity of the Lao armed forces.
- Lao PDR should ensure that investigations into the falsification of data by UXO Lao are completed in a transparent manner, and systems are put in place to prevent such occurrences in the future.

CONTAMINATION

Lao PDR 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 1973,¹ including more than 270 million submunitions (known locally as bombsies). The failure rate is not known.

Lao PDR does not yet have a reliable estimate of CMR contamination, but in 2016 it embarked on plans for a nationwide CMRS that should produce an evidence-based assessment of the extent of CMR contamination (see, below, the section on Standards and Legislation).² US bombing data indicate 70,000 individual target

locations across Lao PDR. Fourteen of the country's seventeen provinces are contaminated, with nine heavily affected: Attapeu, Champasak, Houaphanh, Khammouane, Luang Prabang, Saravan, Savannakhet, Xekong, and Xiengkhuang.³ International operators believe total CMR contamination is likely to amount to less than 2,000km².⁴

Bombsies accounted for almost 78% of all items cleared in 2017,⁵ a decrease from the 84% the previous year.⁶ CMR continue to present a humanitarian and socio-economic challenge, causing deaths and injuries and contributing to food insecurity by limiting safe access to potentially rich agricultural land, and adding to the cost of development projects when land needs to be cleared.⁷

High-risk activities, such as foraging on contaminated area or lighting fires directly on the ground surface, also continue to pose a risk and result in CMR accidents.⁸ The United Nations Development Programme (UNDP) reported that “economic opportunities in tourism, hydroelectric power, mining, forestry and many other areas of activity considered main engines of growth for the Lao PDR are restricted, complicated and made more expensive” by submunition contamination.⁹

In 2017, there were 19 UXO incidents in total, which resulted in four deaths (one girl and three men) and 37 injured (6 girls, 8 boys, 11 women, and 12 men).¹⁰ Of these, 19 people were injured in incidents involving CMR (five girls, four boys, five women, and five men) and two people were killed (one girl and one man).¹¹ Submunitions are said to be the type of explosive remnants of war (ERW) most feared by the population.¹²

Other Explosive Remnants of War and Landmines

Extensive contamination from other ERW includes 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.¹³ These range from 20lb fragmentation bombs to 2,000lb general-purpose bombs and sometimes bigger items,¹⁴ as well as artillery shells, grenades, mortars, and rockets.¹⁵ Lao PDR is also contaminated, but to a much lesser extent, by anti-personnel mines and anti-vehicle mines (see the *Clearing the Mines* report on Lao PDR for further information).

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.¹⁶ Until 2011, the NRA came under the supervision of the Ministry of Labour and Social Welfare. A decree issued in June 2011 appointed a minister in the Prime Minister’s Office responsible for rural development and poverty reduction as Vice-Chair of the Board, together with the Vice-Minister of Foreign Affairs.¹⁷ A February 2015 decree expanded the NRA board to 22 members, which was chaired by the Minister in the Prime Minister’s Office responsible for rural development, Bounheuang Douangphachanh, and with ministers of Defence, Foreign Affairs and Labour and Social Welfare as vice-chairmen.¹⁸

A parliamentary election in March 2016 led to leadership changes, including the retirement of Bounheuang Douangphachanh. In September 2016, the government transferred the NRA and the mine action sector back under the control of the Ministry of Labour and Social Welfare. This move was reportedly aimed at helping improve efficiency by distributing responsibility for committees across ministries, rather than too many committees falling under the responsibility of the Prime Minister’s office.¹⁹ It is, however, said to have resulted in confusion at provincial and district level about responsibilities. In 2018, there were moves to make the Director of UXO Lao a deputy director of the NRA, alongside two existing deputy directors, and with a responsibility for overseeing UXO Lao (the national operator).²⁰

MoU procedures in Lao PDR remain complex and heavy, causing significant delay and impeding the implementation and expansion of survey and clearance, including by preventing the acquisition and import of equipment. The transfer of the NRA back to the Ministry of Labour and Social Welfare was also reported to have exacerbated existing delays in obtaining approval of MoUs.²¹ MoUs are typically issued to

international clearance operators on a project basis, although NPA reported that its pending MoU covers multiple donors and survey and clearance projects. Operators are required to report and get approval for completed projects before an MoU for a new project can be approved. While operation permits enable the continuation of survey and clearance activities by international operators on the ground, the lack of an MoU prevents expansion of operations or acquisition of new equipment.²² Furthermore, even after formal approval of MoU, operators may still experience challenges importing necessary equipment.²³

The NRA acknowledged that the delay in procurement of vehicles and equipment is a challenge,²⁴ and that some improvements could be made on the part of the national and local authorities involved in the MoU process. However, it also highlighted that some delays in project proposals and MoU approval are due to incorrect reporting or failure to follow correct procedures by clearance operators, something that can be exacerbated by high staff turnover and inadequate internal handover processes.²⁵ At the same time, operators highlighted that it is very difficult to get clarity on correct processes and procedures for reporting and MoU. Projects must also be consistent with the government’s five-year plan and annual plans.²⁶

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.²⁷ 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 US-funded grant manager, Sterling International. As part of its work, Sterling International also provided training in both survey and data analysis and correction to UXO Lao and international clearance operators.²⁸ In May 2018, it was announced that Tetra Tech had won the new tender for this role.

Strategic Planning

The Lao government adopted UXO clearance as a ninth Millennium Development Goal in 2010, targeting removal of all UXO from priority agricultural land by 2020.²⁹ In 2013, the government identified 64 priority areas planned to become small rural townships, 167 focal sites to consolidate and “stabilise” remote rural communities, and more than 1,680 priority projects.³⁰ By 2018, this had risen to 231 focal development areas identified across Lao PDR.³¹

Strategic goals were set out in the “Safe Path Forward II” (SPF) plan, as revised in June 2015, when the NRA set a number of specific targets for the remaining five years up to 2020. These included non-technical survey of 3,860 villages, pursuing technical survey, keeping clearance as a priority of the government’s poverty eradication programme, bringing down the number of casualties to less than 40 a year, and providing medical care, vocational training, and economic support to 1,500 UXO victims.³²

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, with a view to producing Lao PDR’s first baseline estimate of CMR contamination.³³ Survey would be conducted mostly by international non-governmental organisations (NGOs), and to a lesser extent by UXO Lao, possibly with some involvement of the Lao Army in non-technical survey. The paper also stated, without explanation, that the government expects international humanitarian operators, who account for about half the capacity of the humanitarian UXO sector, to cease conducting clearance after technical survey has been completed. The paper called for completing non-technical survey of all villages in the 14 CMR-affected provinces within four years, at an estimated cost of \$6.84 million, and technical survey of all evidence points in five years (by the end of 2021), at a projected cost of at least \$20 million.³⁴

The socio-economic development plan (2016–20) and Agreement No. 65/PM of 2016, on the approval of Priority Development Areas (2016–20), inform land release prioritisation in Laos, by identifying 20 government development priorities; 71 local development priorities, 145 settlement areas; and plans to build 213 big villages to become small towns. In addition, the NRA cooperates with relevant ministries and local authorities to identify annual clearance needs, and in 2017, 45km² of land was thereby identified for clearance.³⁵ For 2018, the plan was for survey to target 938 villages and for 44.8km² of land to be cleared.³⁶

During the Association of Southeast Asian Nations (ASEAN) summit in September 2016, Lao PDR launched sustainable development goal (SDG) 18, which aims to reduce the numbers of casualties caused by UXO, improve the socio-economic development of affected areas, and guarantee better support for victims.³⁷

The NRA set out amended targets in a sector working group meeting in November 2016. These called for non-technical survey of 3,160 villages between 2017 and 2019 at an estimated cost of \$5.6 million and completion of technical survey in 2,700 villages in five years (2017–21) at a cost of \$69.7 million.³⁸ The five-year Lao PDR UXO Plan for 2016–20 (the multi-year workplan), approved in March 2016, and outlined at the November meeting, also targeted clearance for 2017–21 of 45km² a year, far in excess of actual clearance rates. The plan called for spending on clearance of \$57 million.³⁹

Throughout 2017, the mine action sector, with the support of the United States and UNDP, reviewed the initial work of the non-technical and technical survey (CMRS) that began in 2015 in nine of the most heavily contaminated provinces, in order to determine how to improve efficiency of follow-on clearance.⁴⁰

In a very positive development, a first-ever sector-wide annual workplan for Lao PDR (for 2018), was developed with input from all relevant stakeholders and subsequently approved by the NRA Board.⁴¹ As part of this process, in June 2017 the chair of the NRA board — the Minister of Labour and Social Welfare — called on the 14 CMR-contaminated provinces to share their priorities for the year 2018.⁴² A first-ever UXO sector annual work planning meeting, hosted by NRA, took place in Vientiane Province on 8–9 February 2018, with participation from The HALO Trust, Mines Advisory Group (MAG), Norwegian People’s Aid (NPA), Humanity and Inclusion (formerly Handicap International (HI)), UXO Lao, victim assistance (VA) operators, national and provincial authorities, and donors. The objective of the meeting was to discuss each operator’s 2018 workplan and reach agreement for submission to the NRA Board. Stakeholders discussed coordination, problems, and overlaps, and examined province targets. This is a step forward for the mine action sector in Lao PDR, which should lead to increased coordination and steering from the Lao authorities at all levels so the outcomes are agreed and accepted by all stakeholders.⁴³ The annual UXO sector-wide survey workplan in Lao PDR for 2018 aimed to survey a total of 622 villages (108 by UXO Lao; 230 by NPA; 126 by MAG; 121 by HALO Trust; 7 by HI, and 30 by the Lao PDR army company 58).⁴⁴

In 2018, Lao PDR began its national CMRS baseline survey, with funding from the United States. The first phase of the survey involves six province-wide surveys by international operators The HALO Trust, MAG, and NPA of all villages suspected or confirmed as CMR-contaminated, according to the NRA’s village list, in Attapeu, Champasak, Saravan, Savannakhet, Xekong, and Xiengkhuang.⁴⁵ The baseline survey, which will then expand to the other CMR-contaminated provinces, will support efforts by the Government of Lao PDR to quantify the extent of CMR contamination and support planning mechanisms for prioritising clearance of CHAs.⁴⁶

National operator UXO Lao is receiving US funding to conduct clearance of prioritised CHAs, generated by CMRS. There is widespread agreement on the need for improved cooperation and coordination between international clearance operators and UXO Lao, regarding the timely and full sharing of data (including on spot tasks, survey, clearance, and accident data), so that survey and clearance can be implemented efficiently and appropriately.⁴⁷

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 CMRS. In 2017, the Lao government worked on UXO clearance priorities, collating information on priority land from the 14 UXO contaminated provinces. The provinces identified 4,700km² of priority land for development in 2018, of which at least 100km² of CHA was already earmarked for clearance.⁴⁸

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.⁴⁹ A Geneva International Centre for Humanitarian Demining (GICHD) report in 2017 found that, "the current national-level prioritisation policies for UXO clearance in Lao PDR are quite general in nature. And, in the absence of agreed criteria for the sector, each UXO operator uses its own criteria to assist decision-making and work planning at the sub-district level."⁵⁰

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.⁵¹ The NRA acknowledges difficulties in sector planning and prioritisation by local authorities.⁵²

According to the NRA, understanding of CMRS process, especially at the local and field levels, is sometimes limited.⁵³ 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 participate, understand, and accept the results of survey. It is especially important that villagers fully understand that, despite demolition of unexploded items during the CMRS process, CHAs identified through survey remain hazardous until full clearance has taken place, which may not be for many years.⁵⁴ UXO Lao highlighted that once communities know that the surrounding area is contaminated, they urge early clearance.⁵⁵

There is a sector working group process, led by the chair of the NRA board, and co-chaired by UNDP and the US Ambassador in Vientiane, which works with donors and meets several times a year.⁵⁶

Legislation and Standards

Over the last few years, the CMRS has been piloted in Lao PDR, and the survey methodology refined and strengthened.⁵⁷ The original national procedures for survey, approved in 2015, were out of date and completion of the long-awaited revised "Lao PDR UXO Survey Procedures", was welcomed. The new national survey procedures, which specify the minimum requirements for the survey of CMR in Lao PDR,⁵⁸ were drafted in consultation with clearance operators, and completed in September 2017.⁵⁹ Following a slight delay in formal approval by the NRA Board due to an issue with the Lao translation of the document,⁶⁰ the procedures were officially approved by chair of the NRA on 4 July 2018, and entitled "Lao PDR UXO Survey Standards".⁶¹

It was originally intended that once the revised survey operations had been fully established, the original 2015 survey procedures would be amended and incorporated into the relevant chapters of the Lao PDR National UXO/Mine Action Standards. However, in 2017, additional requirements for survey were introduced to support the implementation of the upcoming national CMRS and the concurrent correcting of data errors in IMSMA, and due to time constraints and convenience, the NRA decided to keep the national survey procedures in a single document. The new survey procedures (now standards) are, however, more akin to standing operating procedures (SOPs) than national mine action standards.

As part of the new survey procedure, 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 found with data in IMSMA or in operator files.⁶² Whenever possible, CMR and other ERW identified during non-technical survey are recorded and destroyed the same day, while non-technical survey is ongoing, allowing villagers to see action being taken on the information they have provided. It has also had the effect of encouraging more informants to come forward.⁶³

Technical survey is only carried out based on CMR evidence points and is also conducted on whole villages. Technical survey should start as soon as possible after analysis of non-technical survey findings, and if seasonal, agricultural, or other factors prevent completion of technical survey at a single time-period, it should be suspended and resumed when possible.⁶⁴ 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. Boxes are coloured red if a cluster munition remnant is found; yellow if one or more cluster munition fragment is found; blue if only other items of UXO are found; green if no CMR or cluster munition fragments are found; and grey if the box is permanently inaccessible.⁶⁵

CHAs are established based on red boxes and include a 50m fade-out from the location of submunitions found during technical survey, unless fade-out would extend into inaccessible or commercial concession areas (the responsibility for survey and clearance in commercial concession areas is that of the concession holder).⁶⁶

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”.⁶⁷ The NRA maintained the need to retain some flexibility to accommodate donor stipulations which sometimes require full clearance of UXO for development projects such as schools.⁶⁸ 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.⁶⁹

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.⁷⁰ Interpretation and understanding as to what constitutes “inaccessible” is not clearly defined and has the potential to vary between clearance operators,⁷¹ but according to the national survey standards, dense vegetation and seasonal flooding are not valid reasons for the non-completion of technical survey.⁷² With regards to the 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.⁷³ Furthermore, in technical survey tasks in areas of massive contamination, with overlapping strikes, it is not always possible to clear to fadeout, as the red boxed areas extend too far.⁷⁴

While operators in Lao PDR are required to conduct CMRS in accordance with the national survey standards, there is still scope for flexibility and adaptability in their individual SOPs, recognising that the approach may be different in different provinces based on the conditions on the ground. Factors such as the percentage of each box surveyed (above and beyond the mandatory 50%, and ranging from 50 to 70%), time in box, search patterns, type of detector used, and team size and structure, therefore, varied between operators.⁷⁵

Quality Management

All clearance organisations in Lao PDR are required to have a documented internal quality management (QM) system, covering both quality assurance (QA) and quality control procedures (QC).⁷⁶ External QM inspections of clearance organisations are carried out by the NRA.⁷⁷ However, at present the NRA’s QM capacity is extremely limited, with only two QM teams to cover sector-wide clearance. The NRA is trying to secure funding to double its QM capacity to four teams.⁷⁸

During CMRS, the focus of QM should be QA rather than QC, as it is not possible to conduct a post-survey QC as there are no lanes marked during the technical survey process.

Information Management

The national IMSMA database has multiple data problems, including incorrect or incomplete historical data, missing data from the migration to IMSMA, and delays in entering new or corrected data into the database.⁷⁹

Sterling International, which provides capacity support to the UXO Lao IM department to identify and correct historical data, has developed a tool to help identify data issues in IMSMA.⁸⁰ A 2017 report by Sterling International 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.⁸¹ In 2018, evidence of falsification of UXO Lao CMR CHA data in Houaphanh Province, came to light, and is subject to internal and external investigation.⁸²

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 information on EOD roving tasks, area clearance, and accident data.⁸³ It is also important that village-level data corrections made by operators during the nationwide CMRS are updated in IMSMA in a timely manner,⁸⁴ but as at June 2018, no standard procedure was in place for how this should be achieved.⁸⁵

During implementation of the nationwide CMRS, operators have encountered challenges caused by outdated or inaccurate village boundary data, for example in instances where villages have merged or separated since the original village boundaries were determined.⁸⁶ Where possible in these instances, the boundary as understood by the villagers is used.⁸⁷

Sometimes villagers have been moved to land where no-one has lived previously, making collection of data during non-technical survey more challenging.⁸⁸ The NRA's multi-year work plan for the period 2016-20 had identified 3,860 villages requiring non-technical survey and linked to all UXO activities in Lao PDR. In July 2017, the NRA reported that of these, 2,873 villages are known to be impacted by CMR,⁸⁹ and require CMRS as part of the nationwide survey, though the process by which the list was elaborated is unclear. The NRA has recognised that there may be anomalies in this list, and that any villages discovered to be contaminated with CMR, but not on the list, should be reported to them.⁹⁰

Operators

Land release operations in Lao PDR are conducted by a range of implementing partners including the national operator, UXO Lao; international NGOs, The HALO Trust, HI, MAG, and NPA; commercial clearance operators; and the Lao PDR armed forces. Demining personnel of the national and international clearance operators, excluding commercial operators, totalled approximately 2,452 in 2017, of whom 680 were women, roughly unchanged from the previous year.⁹¹

UXO Lao, the oldest and largest clearance operator in Laos, is a government organisation operating under the Ministry of Labour and Social Welfare.⁹² Operating in nine provinces (Attapeu, Champasak, Houaphanh, Khamouane, Luang Prabang, Saravan, Savannakhet, Xekong, and Xiengkhuang), it employs 1,381 staff (of whom 351 are female). In Luang Prabang, UXO Lao operates with funding from Norway and management support from NPA.⁹³ At present, UXO Lao is conducting more clearance than survey, which is largely determined by the donors, and 2017 capacity comprised of 80 clearance teams, 15 technical survey teams, and 9 non-technical survey teams.⁹⁴ UXO Lao would like to maintain survey capacity of at least one survey team per province, but reported the loss of Australian and Swiss funding.⁹⁵

The HALO Trust's survey and clearance efforts are focused on Savannakhet province, where it is currently operating in the four most contaminated districts: Nong, Phine, Sepon, and Vilabouly.⁹⁶ As at the end of 2017, HALO Trust was employing a total of 303 national staff (45% women), which included a clearance capacity of 10 teams and a survey capacity of 14 teams. The HALO Trust had planned to expand its survey capacity in 2017, but was prevented from doing so due to problems securing the MoU and importing equipment.⁹⁷

HALO Trust will reduce its 2018 clearance capacity to four BAC teams and one EOD team (to support the non-technical survey process and manage complex demolitions), and increase its survey capacity to 16 teams, under a new larger team configuration. HALO Trust's shift to survey is for the completion of the CMRS of Savannakhet province.⁹⁸ After extensive work-planning and discussion on village allocation with the local and provincial authorities, as well as UXO Lao, HALO Trust has been granted permission to work in 538 villages across 14 districts in Savannakhet Province, with first priority given to the 6 most heavily contaminated districts to the east.⁹⁹

HI saw a big reduction in capacity in 2017, due to a fall in funding. At the start of 2016, it had nine clearance/technical survey sections, which had fallen to five sections in 2017. HI ceased technical survey operations in February 2017 and instead prioritised clearance.¹⁰⁰ As at April 2018, HI had ceased land release operations in Savannakhet province, and had started a new project in Houaphanh province in the north of Lao PDR, where it hoped to become operational from mid-2018 with funding from French Ministry of Foreign Affairs and the European Union (EU). HI aimed to focus its efforts solely on Huamuang district, with mobilisation of one team for technical survey, two for clearance, and one roving team. It also planned to partner with development organisations to better shape the prioritisation process.¹⁰¹

MAG is operational in two provinces in Lao PDR: Xiengkhuang (Khoun, Paxai and Nonghet districts) in the north and Khamouane (Boualapha district) in the south. In 2017, MAG was supported by the US government, Norwegian Ministry of Foreign Affairs, an American family foundation and a Japanese philanthropist to carry out survey and clearance. 17 mine action teams (MATs) carried out survey and clearance in Xiengkhuang while 5 teams focused exclusively on clearance activities in Khamouane. Also based in Xiengkhuang, MAG has 2 Quality Management teams, a mechanical support team, and a 15 person Community Liaison team which conducts non-technical survey, risk education, and dangerous area reporting. MAG subcontracted two NPA teams for six months under the NMFA grant to carry out CMRS in Khamouane.¹⁰²

At the end of 2017, MAG employed 395 staff (25% female). However, with the shift to implementing the US-funded survey project in Xiengkhuang, as well as increased funding from both the American family foundation and Norway, MAG expanded significantly in both provinces in early 2018. By May, MAG was employing 528 staff (31% women). The additional teams were recruited and trained at the end of 2017 and focused predominantly on Xiengkhuang, where MAG will conduct CMRS across the entire province with US State Department funding as part of the national survey project, as well as clearance of priority areas.¹⁰³

NPA is operational in the three southern provinces of Attapeu, Saravan, and Xekong, and plans to also become operational in Champasak province, as soon as its pending MoU is approved by the NRA. In addition, and as mentioned above, NPA is also subcontracted by MAG to carry out CMRS in Khamouane, after which MAG conducts follow-on clearance of the CHAs created by NPA.¹⁰⁴ Furthermore, NPA acts as the project coordinator for Norwegian Ministry of Foreign Affairs (NMFA) bilateral support to Lao PDR, through UXO Lao's operations in Luang Prabang, in the north of the country.¹⁰⁵ Survey and clearance output was lower than in previous years due a two-month stand-down period without field operations due to the delays in the issuing of an MoU.¹⁰⁶ NPA employed 189 staff in survey and clearance operations in 2017, comprising 23 CMRS teams and 1 BAC team.

Lao PDR accredited 16 commercial companies in 2017,¹⁰⁷ of which 13 were active.¹⁰⁸ International commercial operators include Auslao UXO Clearance, BACTEC (Battle Area Clearance, Training, Equipment and Consultancy), Milsearch, and MMG. Accredited national commercial operators include ASA Power Engineering, GREAT Company, Lao BSL UXO Clearance, Lao Uneod Cooper, L&B UXO Clearance, Longlo Lao UXO Clearance, OUMMA UXO Clearance, PSD, SBH, Sengphet UXO Clearance, and XTD UXO Clearance. One additional national commercial company, Phanvila, was registered in 2017.¹⁰⁹

The Lao armed forces has five humanitarian teams in total; three funded by the government and two by the Korean International Cooperation Agency.¹¹⁰ Lao army engineers not involved with humanitarian teams and not coordinated by the NRA were reportedly due to start clearance of UXO, which was holding up construction work on the \$6 billion Laos-China high speed railway.¹¹¹ According to the NRA, Lao army engineers started clearance in 2017, under the Engineering Department of Ministry of National Defense, but as at April 2018, no CMR data was available.¹¹²

LAND RELEASE

The almost 200km² of land confirmed as hazardous in 2017, based on NRA data, was an increase on the 180km² confirmed in 2016, based on operator data.¹¹³ The amount of land released by clearance, which totalled 41.8km² in 2017, was also a significant increase on the 30km² cleared in 2016.

Survey in 2017

The NRA reported that non-technical survey was conducted by The HALO Trust, MAG, NPA, and UXO Lao in 2017, in a total of 223 villages, during which 4,082 CMR were destroyed.¹¹⁴ In addition, technical survey in 2017 identified almost 200km² as CMR-contaminated, and resulted in the destruction of nearly 29,000 CMR and almost 4,000 items of other UXO (see Table 1 below).

Table 1: Technical survey of CMR-suspected area in 2017¹¹⁵

Operator	Area surveyed (m ²)	Area identified (m ²)	Submunitions destroyed	Other UXO destroyed
Lao Army 58	140,000	0	4	0
HALO Trust	25,746,250	8,453,279	1,989	578
HI	1,387,500	622,230	99	6
MAG	67,174,283	65,179,171	5,957	11
NPA	54,544,335	53,990,927	4,927	107
UXO Lao	100,716,905	71,265,845	15,939	3,257
Totals	249,709,273	199,511,452	28,915	3,959

The CMRS approach has been strengthened over the last couple of years, with more emphasis placed on the importance of desk assessment of historical data and comprehensive non-technical survey. A review by NPA of villages surveyed between 2011 and 2017 in Attapeu, Saravan, and Xekong provinces concluded that teams had not made sufficient use of historical data in some villages. NPA subsequently amended procedures to include analysis of non-technical survey data by senior information management and operations staff and changed team structures to strengthen quality management.¹¹⁶ Methodology was also strengthened by having survey teams spend at least three days in each village, and, where possible, staying in the village, to facilitate the collection of all relevant data.¹¹⁷ The HALO Trust also highlighted the benefit of teams staying in the village during the CMRS process, to help identify further

evidence and build trust with the local communities.¹¹⁸ Re-survey of the villages in which some of the NPA non-technical survey had previously been undertaken will be carried out as part of the US-funded nationwide survey, which includes Attapeu, Saravan, and Xekong provinces.¹¹⁹

Operators continue to refine their cluster munition survey methodology in a bid to accelerate operations. 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, was successfully trialled in 2016 by MAG and NPA partnering in Khamouane province. The trial demonstrated the potential for significant gains in productivity when applied in areas of heavy CMR contamination with overlapping strikes and large CHA polygons.¹²⁰ The new national survey procedure permits

operators to skip one or more boxes to speed up the technical survey process, but stipulates that skipped boxes should never be at the edge of a technical survey task and must always have a red or yellow box outside them.¹²¹ Where appropriate, skipping boxes has now become standard practice for MAG, NPA, and UXO Lao technical survey teams, where the focus is on identifying the boundaries of CHAs.¹²² As at May 2018, The HALO Trust had not officially incorporated this methodology into its CMRS operations in Savannakhet province.¹²³

In addition, 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. Notably, in areas where MAG is applying EPP mapping, it is using its own EOD data.¹²⁴ At present, the new national survey standards stipulate that only complete CHAs – not partial iCHAs – can be reported and entered into the national IMSMA database.¹²⁵

An end of survey report/survey conclusion form was created in 2017 to standardise the way clearance operators finish village surveys and then report to the government. The form is, however, part of the new survey procedure, which had not yet been approved as at June 2018.¹²⁶ In addition, a “UXO Hot Line” was approved on 28 November 2017, to make it easier for members of local communities to report unexploded ordnance¹²⁷ and to request support in the aftermath of an incident.¹²⁸

Clearance in 2017

CMR clearance output per operator for 2017, as reported to Mine Action Review, totalled just over 33km², in the course of which 84,977 submunitions were destroyed, along with 135 bombs, 23 mines, and 23,451 other items of UXO (see Table 2).¹²⁹ This excludes 5.8km² of clearance reported for LAUNC, which was conducted in support of dam projects, irrigation, crops, and forestry, and other areas, but on land not contaminated with CMR or other ERW. Mine Action Review therefore does not include this in CMR clearance data.

Table 2: Battle area clearance by operator in 2017¹³⁰

Operator	Roving tasks	Clearance tasks	Area cleared (m ²)	Submunitions destroyed	Bombs destroyed	Other UXO destroyed	Mines destroyed
Army 58	14	1	42,251	51	2	132	3
Lao Army	0	2	35,841	0	0	0	0
HALO Trust	619	39	1,510,067	5,243	19	2,400	1
HI	100	6	177,686	1,564	33	350	0
MAG	2,148	111	4,760,152	10,888	12	1,501	1
Milsearch	6	121	731,177	40	0	21	0
MMG	0	13	435,645	24	0	77	0
NPA	390	13	255,973	5,674	4	956	2
UXO Lao	1,105	886	25,075,490	61,493	65	18,014	16
Totals	4,382	1,192	33,024,282	84,977	135	23,451	23

According to Lao PDR’s CCM Article 7 transparency report, a total of just over 41.8km² was cleared in 2017 across 13 provinces (see Table 3).¹³¹ However, this contains almost 5.8km² of clearance reported for LAUNC, which was not in fact CMR clearance (see above).

Taking the total clearance figure of 33 km², 2017 clearance output represents a slight increase compared to 2016, when 30.17km² was cleared (or alternatively, a slight decrease compared to the 34.10km², according to Lao PDR’s Article 7 report for 2016).

Table 3: Battle area clearance by province in 2017^{132*}

Province	Area cleared (m ²)
Attapeu	3,360,393
Bolikhamxay	2,357,251
Champasak	2,206,176
Houaphanh	1,777,402
Khamouane	3,474,401
Luang Prabang	1,288,788
Oudomxay	35,841
Saravan	2,935,606
Savannakhet	8,646,986
Vientiane (province)	317,213
Xekong	1,092,027
Xaisomboun	3,147,844
Xiengkhuang	11,180,359
Total	41,820,287

* Includes almost 5.8km² cleared by LAUNC on land not contaminated by CMR or other ERW.

UXO Lao reported that lack of support from the community on the vegetation cutting required prior to survey and clearance operations, also posed a challenge,¹³³ especially with regards to cutting of vegetation beyond the direct area of land which will be used. As is the case with MAG and NPA, UXO Lao mainly trains and deploys local people to cut vegetation, but unlike the international operators, it does not receive specific funding for this activity.¹³⁴ The HALO Trust undertakes all of its own vegetation cutting.¹³⁵

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.¹³⁶

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.¹³⁷

In 2017, UXO Lao reported clearing 32.5km² (99% of the 32.07km² 2017 target), during which 72,417 items of UXO were disported, of which 80% were CMR.¹³⁸ In 2018, UXO Lao planned to conduct non-technical survey and technical survey in 108 villages, and clear 36.73km² of land, across the nine provinces in which it operates.¹³⁹

ARTICLE 4 COMPLIANCE

Under Article 4 of the Convention on Cluster Munitions, 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 2020.

Given the extent of its CMR contamination, Lao PDR will clearly need to apply for an extension. This is due for submission by the start of December 2018, as required by the Convention (i.e. a minimum of nine months prior to the meeting of states parties or review conference at which it is to be considered), and will be considered at the Eighth Meeting of States Parties in 2019. It is expected that initial results from the national CMRS will inform Lao PDR's estimate of the true extent of contamination for the purposes of the extension request, but that a more accurate assessment of CMR contamination will not be known until the nationwide survey is completed.¹⁴⁰

Over the last five years, Lao PDR has cleared over 237km² (see Table 4).

Table 4: Five-year summary of CMR clearance

Year	Area cleared (km ²)
2017	33.02
2016	30.17
2015	41.30
2014	67.78
2013	64.86
Total	237.13

The NRA has highlighted the challenges in balancing resources for survey and clearance.¹⁴¹ 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.¹⁴² Over the last two years, around 500km² of CHA has already been identified, and as the nationwide CMRS progresses this area of confirmed contamination is expected to continue to increase rapidly.¹⁴³

The clearance of CMR in Lao PDR will take many years and will require long-term national capacity and funding. In 2018, the NRA aimed to clear 5,000 hectares (50km²) of CHA, based on existing capacity.¹⁴⁴ National funding and in-kind support by the government of Lao PDR was reported to total just under US\$750,000 in 2017. This figure includes office rent of NRA and UXO Lao; support in construction of a new provincial office in Attapeu province; tax exemption on visas and operator vehicle and equipment imports; and financial support associated with the humanitarian clearance team of the Lao PDR Army.¹⁴⁵ It is only in the past one to two years that the Government of Lao PDR has allocated funds in its budget for UXO clearance, directed to the Lao People's Army dedicated team.¹⁴⁶ The 2017 funding is substantially less than financial contributions in previous years.

US President Barack Obama pledged in September 2016 that the United States would provide \$90 million (\$30 million a year over three years) for the UXO sector, doubling the level of US funding in 2015.¹⁴⁷ The committed funding is shared between survey, clearance, risk education, and victim assistance, and also includes budget for capacity development support to UXO Lao and the NRA.¹⁴⁸ Roughly half of the US\$90 million is for survey.¹⁴⁹ Survey and clearance operations are implemented through The HALO Trust, MAG, NPA, and UXO Lao.¹⁵⁰ US funding to UXO Lao, however, is primarily for clearance, although both the NRA and UXO Lao feel that UXO Lao's capacity makes it well suited to conduct survey.¹⁵¹ The Lao government also has bilateral funding agreements with the United States, Japan, and Norway.

The UXO Trust Fund established in 2010 has been replaced by a new multilateral project signed by the Government of Lao PDR and UNDP entitled "Moving towards achieving SDG 18 – Removing the UXO Obstacle to Development in the Lao PDR". The objective is to support the NRA and UXO Lao for the next five years, with the support of Canada, Ireland, Luxembourg, New Zealand, the Republic of Korea, and the EU.¹⁵²

Overall international cooperation and assistance in 2017 was reported to total US\$25,633,620, including survey and clearance, risk education, and victim assistance, and not including the contribution of domestic commercial companies to the UXO sector.¹⁵³ In 2018, Lao PDR was budgeting for US\$31,637,633 of support for mine action, of which it had secured US\$22,460,200 of funding as at April 2018, leaving a gap of US\$9,177,433.¹⁵⁴ However, the NRA expected survey capacity to increase due to the US-funded survey project, but hoped that clearance capacity would also increase through Norwegian, United Kingdom (UK), EU and other donor funding.¹⁵⁵

While a comprehensive plan is in place for the province-wide survey of villages in six of the most contaminated provinces, there are currently no survey or clearance operations in the affected provinces such as Borikhamxay, Bokeo, Luangnamtha, Oudomxay, Phongsaly, Vientiane, Xayabouly, and Xaysomboun.¹⁵⁶

Lao PDR reported that existing funding was insufficient.¹⁵⁷ It also complains that international funding is often unpredictable, leading to the halting of operations or reduction in employees in some areas. According to the NRA, owing to the limited number of teams and sometimes inadequate detector technology, village clearance tasks can sometimes only cover a portion of the entire village CHA at a time.¹⁵⁸

In its Article 7 transparency report for 2017, Laos PDR has identified the need for an awareness raising campaign and the recruitment of a national or international consultant to provide support for mobilising more funds and raising public awareness nationally and internationally, including by nominating a UXO goodwill ambassador for the country.¹⁵⁹

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- 4 Interviews with international operators, Vientiane, 3–7 May 2016.
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- 12 Interview with Jo Durham, Independent Expert, Vientiane, 10 November 2011.
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- 16 NRA, "UXO Sector Annual Report 2009", Vientiane, May 2009, p. 14.
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- 21 Interviews with international operators, Laos, 1–12 May 2018.
- 22 Ibid.
- 23 Ibid.
- 24 Email from Bouala Thongsavanh, NRA, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018; and interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
- 25 Interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
- 26 Email from Bouala Thongsavanh, NRA, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018.
- 27 Interview with Olivier Bauduin, UNDP, Vientiane, 2 May 2018; and email, 10 July 2018.
- 28 Interview with Hugh Hosman and Marco Heuscher, Sterling International, Vientiane, 2 May 2018.
- 29 "Laos: new MDG to tackle UXOs", *IRIN*, 12 November 2010.
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- 31 Presentation by Saomany Manivong, UXO Lao, Vientiane, 2 May 2018.
- 32 Interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 4 May 2016.
- 33 NRA, "From Survey to Safety, Quantifying and Clearing UXO Contamination in Lao PDR", March 2016.
- 34 Ibid., pp 1–3.
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- 53 Email from Bouala Thongsavanh, Assistant to the Director of the NRA, on behalf of Phoukhieo Chanthasomboune, Director, National Regional Authority (NRA), 30 April 2018.
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- 56 Interview with Phil Bean, US PMWRA, and Olivier Bauduin, (then with) Sterling International, in Geneva, 14 February 2018.
- 57 Interview with Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
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- 59 Interviews with international operators, Lao PDR, 1–12 May 2018; and Phoukhieo Chanthasomboune, NRA, Vientiane, 2 May 2018.
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- 97 Ibid.
- 98 Ibid.
- 99 Email from Olivia Meader, HALO Trust, 18 July 2018.
- 100 Email from Julien Kempeneers, Humanitarian Mine Action Coordinator, HI, 30 April 2018.
- 101 Emails from Julien Kempeneers, HI, 30 April and 30 June 2018.
- 102 Email from Blossom Gilmour, Country Director, MAG, 25 June 2018.
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- 105 Interview with Aubrey Sutherland, NPA, 01 May 2018.
- 106 Emails from Ulric Eriksson, NPA, 1 May 2018; and Aubrey Sutherland, NPA, 21 June 2018.
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- 113 The NRA reported 101.48km² confirmed as hazardous in 2015 and 113.41km² in 2016 but its data included major discrepancies with operators’ results. In particular, the NRA did not record any survey activity by The HALO Trust and reported that NPA had confirmed 12.14km² as hazardous area.
- 114 Email from Bouala Thongsavanh, NRA, on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018.
- 115 Ibid. There was a discrepancy between technical survey data reported by the NRA, compared to data reported by the clearance operators. HALO Trust reported surveying 36,182,500m² through technical survey, and confirming 22,981,244m² as CMR-contaminated. During technical survey HALO reported destruction of 1,893 submunitions and 629 other items of UXO. Response to Mine Action Review questionnaire from Olivia Meader, HALO Trust, Sepon, 11 May 2018. MAG’s data on 2017 technical survey matched that of NRA’s almost exactly, with the exception that MAG reported destruction of 12, rather than 11, items of other UXO during technical survey. Email from Neil Arnold, MAG, 9 May 2018. NPA reported surveying 56,317,500m² through technical survey, and confirming 53,963,776m² as CMR-contaminated. During technical survey NPA reported destruction of 3,709 submunitions and 448 other items of UXO. Email from Ulric Eriksson, NPA, 1 May 2018.
- 116 Emails from Jonas Zachrisson, then Country Director, NPA, 17 March and 23 May 2017; and interview, 24 April 2017.
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- 120 Interviews with Neil Arnold, MAG, Phonsavanh, 6 May 2018, and Robby Dehondt, Sterling International, Sepon, 11 May 2018; email from Simon Rea, MAG, 11 April 2017; and Skype interview, 25 April 2017; and email from Ulric Eriksson, NPA, 1 May 2018.
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- 124 Interview with Neil Arnold, MAG, Phonsavanh, 6 May 2018.
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- 127 CCM Article 7 Report (for 2017), Form A.
- 128 Email from Jason Villamil, HALO Trust, 23 June 2018.
- 129 Email from Bouala Thongsavanh on behalf of Phoukhieo Chanthasomboune, NRA, 30 April 2018.
- 130 Ibid.; Mine Action Review has excluded clearance data reported by Lao PDR for LAUNC (LAO UNEOD COOPER Co., Ltd), on 14 tasks totalling 5,799,051m². Clearance work by LAUNC in 2017, was in support of dam projects, irrigation, crops, and forestry, and others, in the provinces of Bolikhamxay, Champasak, and Xaisomboun. However, no items of CMR or other ERW were reported as having been destroyed during these projects. In addition, there was a discrepancy between clearance data reported by the NRA and the data reported by the clearance operators. HALO Trust reported 1,324,314m² of BAC, and destruction of 3,265 submunitions (1,640 during BAC and 1,625 during EOD callouts) and 1,533 other items of UXO (1,203 during BAC and 330 during EOD callouts). Response to Mine Action Review questionnaire from Olivia Meader, HALO Trust, Sepon, 11 May 2018. MAG reported a slightly higher amount of BAC (4,734,636m²), but the same number of items destroyed: 10,888 submunitions (3,238 during BAC and 7,650 EOD call outs) and 1,513 items of other UXO (421 during BAC and 1,092 during EOD callouts). Email from Neil Arnold, MAG, 9 May 2018. NPA reported 369,904m² of BAC, and destruction of 7,472 submunitions (1,305 during BAC and 6,167 during EOD callouts) and 1,188 other items of UXO (19 during BAC and 1,169 during EOD callouts). Email from Ulric Eriksson, NPA, 1 May 2018.
- 131 CCM Article 7 Report (for 2017), Form F.

- 132 CCM Article 7 Report (for 2017), Form F.
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- 135 Interview with Olivia Meader, HALO Trust, Sepon, 11 May 2018.
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