

ARTICLE 5 DEADLINE: 1 MARCH 2023
 INTERIM DEADLINE FOR SURVEY, WHICH IS UNLIKELY TO BE CONDUCTED

KEY DATA

ANTI-PERSONNEL (AP) MINE CONTAMINATION:

HEAVY
 (NO CREDIBLE ESTIMATE)

AP MINE CLEARANCE IN 2020

1 KM²

(ESTIMATED FROM 3.1 KM² OF BATTLE AREA CLEARANCE)

AP MINES DESTROYED IN 2020

923

LAND RELEASE OUTPUT

Category	2019 (km²)	2020 (km²)
Clearance	1.0 (estimated)	3.1 (BAC clearance including mines)
Technical Survey	0.37	0
Non-Technical Survey	0	0

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

KEY DEVELOPMENTS

Yemen's Mine Action Coordination Centre (YMACC), established by the Yemen Executive Mine Action Centre (YEMAC), started operating in April 2020 with a mandate to organise and coordinate the work of YEMAC's operational capacity and international operators. YMACC issued the first task orders to international demining NGOs for non-technical survey and explosive ordnance disposal (EOD). YEMAC, which oversees YMACC, installed and started populating an IMSMA [Information Management System for Mine Action] Core database but plans for non-technical survey as part of a baseline survey were obstructed by insecurity, lack of training, and the COVID-19 pandemic, which resulted in the closure of Aden airport and the suspension of some operations. The Development Initiative (TDI) deployed to Yemen in November 2020 under contract to UNDP to start training YEMAC teams.

RECOMMENDATIONS FOR ACTION

- Yemen should develop a mine action strategy providing a framework and clear targets for tackling survey and clearance of mines and explosive remnants of war (ERW).
- YEMAC should conduct systematic non-technical survey in accessible districts to start the process of establishing a baseline estimate of contamination.
- YEMAC should live up to its responsibilities as a national authority and require Project Masam to provide regular, detailed reporting of its operations and submit to independent quality control, including investigation of demining accidents.
- YEMAC should provide operating results disaggregating data for anti-personnel mines, improvised mines, and improvised explosive devices, and should ensure reporting forms enable collection of these data.
- Yemen should remove the bureaucratic obstacles to importing equipment that have hampered implementation of YEMAC plans for non-technical survey and clearance.

- YEMAC and YMACC should increase transparency by publishing regular, comprehensive reports on developments in the management, planning, and implementation of mine action.
- Yemen should clarify and consolidate the roles and authority of YEMAC and YMACC.

ASSESSMENT OF NATIONAL PROGRAMME PERFORMANCE

Criterion	Score (2020)	Score (2019)	Performance Commentary
UNDERSTANDING OF CONTAMINATION (20% of overall score)	3	3	YEMAC continues to declare that the extent of anti-personnel mined area is unknown and minimal non-technical survey occurred in 2020 due to conflict, the effects of the COVID-19 pandemic and bureaucratic obstacles in the Ministry of Planning and International Cooperation and other government entities. Meantime, armed conflict and criminality continue to add explosive hazard contamination, with extensive use of anti-personnel mines, in particular mines of an improvised nature.
NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT (10% of overall score)	4	3	Mine action in Yemen, one of the world's poorest countries, is entirely dependent on international donor funding. Conflict between Sana'a-based and Aden-based authorities has de facto split YEMAC, weakening its role national role and leaving YEMAC North subject to Coalition sanctions. YEMAC's two components do not coordinate their activities. YEMAC has, though, opened a coordination centre in the south to develop partnerships with international organisations as part of UN-supported moves to strengthen the programme in areas controlled by the internationally-recognised government.
GENDER AND DIVERSITY (10% of overall score)	5	3	Yemen's Article 5 deadline extension request made no reference to gender and efforts by the United Nations Development Programme (UNDP) and other international organisations to widen the participation of women in mine action face cultural barriers. Still, in 2020 YEMAC trained the first female bomb disposal operator and deployed a number of female staff for explosive ordnance risk education (EORE) and non-technical survey. In 2021, YEMAC planned to include 10 women among 30 candidates for non-technical survey training.
INFORMATION MANAGEMENT AND REPORTING (10% of overall score)	4	3	YEMAC, with support from UNDP and the Geneva International Centre for Humanitarian Demining (GICHD) installed IMSMA Core and replacing a system described by YEMAC as unfit for purpose. Results of survey and clearance are not reported accurately. Yemen has regularly submitted Article 7 transparency reports and its latest report (covering 2020) provided a detailed picture of the progress of mine action. YEMAC North continues to operate the old IMSMA system.
PLANNING AND TASKING (10% of overall score)	5	5	Yemen does not have a national strategy or plan, but continued operations on an emergency basis focused on life-saving interventions and civilian infrastructure hit hard in the conflict.
LAND RELEASE SYSTEM (20% of overall score)	4	4	Yemen's national mine action standards were once IMAS-compliant but are now long out of date. YEMAC has started reviewing its national standards but no revised standards had received approval as of writing.
LAND RELEASE OUTPUTS AND ARTICLE 5 COMPLIANCE (20% of overall score)	6	6	YEMAC's emergency response targets all forms of explosive hazard and although area clearance and the number of devices destroyed dropped in 2020, non-technical survey and EOD training of YEMAC teams laid a foundation for increased outputs. Conflict and insecurity, however, prevented YEMAC from conducting non-technical survey to establish a baseline estimate of contamination, the main goal of its three-year Article 5 deadline extension plan.
Average Score	4.4	4.0	Overall Programme Performance: POOR

DEMINING CAPACITY

MANAGEMENT CAPACITY

- Yemen Executive Mine Action Centre (YEMAC)
- Yemen Mine Action Coordination Centre (YMACC)

NATIONAL OPERATORS

- YEMAC
- Yemen Army Engineers

INTERNATIONAL OPERATORS

- Danish Refugee Council Danish Demining Group

- The HALO Trust
- Norwegian People's Aid
- Project Masam/SafeLane/Dynasafe

OTHER ACTORS

- United Nations Development Programme (UNDP)
- Geneva International Centre for Humanitarian Demining (GICHD)
- The Development Initiative (TDI)
- Prodigy Systems

UNDERSTANDING OF AP MINE CONTAMINATION

Yemen reported in 2021, for the third successive year, that the level of AP mine contamination and its impact are unknown. The statement reflected conditions in Yemen in the sixth year of an armed conflict between the internationally recognised government (IRG) based in the south and Ansar Allah known as Houthis who are based in the capital, Sana'a, in the north and referred to as the De Facto Authorities (DFA). The conflict has prevented survey, contaminated new areas, and re-contaminated areas previously cleared.¹

A Landmine Impact Survey in 2000 found mines in 18 of Yemen's 21 governorates resulting from conflicts in 1962–69 and 1970–83, as well as mines laid in border areas between North and South Yemen before they unified in 1990, and contamination from successive conflicts that erupted since 1994. The Article 5 deadline extension request Yemen submitted in 2014 identified 107 confirmed minefields covering a total of 8.1km² and 438 suspected hazardous areas (SHAs) covering 338km². By 2017, YEMAC said it had 569 suspected mined areas remaining, which were covering 323km².² YEMAC believed a significant proportion of this might be released or reduced through survey. However, the United Nations has observed that the conflict which erupted in March 2015 "changed the extent and complexity of contamination dramatically."³

A United Nations panel reported in 2021 that the Houthis had made "widespread" use of mines in villages, schools, near water sources, on beaches, and on roads, posing a constant threat to civilians and provoking displacement.⁴ Houthi officials have acknowledged using landmines⁵ and have reportedly laid large numbers of improvised explosive devices, including mines of an improvised nature, along frequently shifting frontlines in the conflict. Analysis of some 2,400 improvised devices since 2017 found 70% to be mines

of an improvised nature.⁶ Contamination is especially high along Yemen's west coast with the aim of stalling the advance of pro-government Yemeni and Saudi coalition forces towards the strategic port of Hodeida and more recently around Marib, a focus of intense fighting in 2020. A mine blast that hit a convoy carrying the IRG Minister of Defence west of Marib city in February 2020 pointed to continuing Houthi anti-vehicle mine use.⁷

YEMAC reported new emplacement of mines in Hadramaut, Mahrah, and Shabwah, mostly by al-Qaeda in the Arabian Peninsula (AQAP) and Islamic State, including TM-46 or TM-57 anti-vehicle mines modified with sensitive pressure plates to function as anti-personnel mines.⁸ UN experts also report rising use of improvised devices by criminal groups, notably in governorates such as Hadramaut which have access to maritime supply routes. The great majority—around 70%—are mines of an improvised nature, notably TM-57 anti-vehicle mines hooked up to pressure plates and/or incorporating anti-handling features provided by MUV fuzes of a style produced by Russia.⁹

Houthi have reportedly used improvised sea mines since 2016 posing a threat to shipping and the fishing industry in the Red Sea and Arabian Sea. In October 2020, Yemen's Coast Guard located a sea mine as far east as al-Mukalla, which would represent a drift of 1,000 kilometres from Hodeida and coastal areas controlled by Houthis. An Emirati tanker, the *Syra*, was damaged by a sea mine explosion near Yemen's Al-Nashimah port in October¹⁰ and a Maltese-flagged oil tanker, *MT Agrari*, was hit by a mine near Shuqaiq, off the coast of Saudi Arabia in November 2020.¹¹ Containing batteries with a life of six years or more, the UN noted that floating mines released in the past year could remain a threat until 2028 and beyond.¹²

NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT

Management of mine action in Yemen is geographically divided along the lines of the conflict that erupted in March 2015 between Ansar Allah (Houthis) controlling the capital Sana'a and much of the north and west, and the IRG, operationally based in Aden and the south. The Sana'a-based inter-ministerial National Mine Action Committee (NMAC), which previously formulated national mine action policy, is no longer recognised by the IRG. It still exists in the north but no longer plays a meaningful role. In the south, YEMAC has fulfilled the dual role of regulator responsible for policy, planning and standards while also serving as the sole national operator.¹³

YEMAC was established in Sana'a in January 1999 as a national mine action agency and nominally maintains a national role today, with more than 1,000 staff working in 20 of Yemen's 21 governorates as at late 2019.¹⁴ In practice, however, YEMAC has split into two, centred round Sana'a and Aden. The Sana'a office employed around 500 staff and 30 clearance teams, working in the northern governorates controlled by the Houthi forces. Operations, however, are severely constrained by shortages of equipment, including personal protective equipment (PPE) and detectors, aggravated by controls that the Saudi-led coalition applies to deliveries of any dual-use equipment. YEMAC North is reportedly interested in engaging with international

operators but prospects for their meaningful deployment appear slim while coalition sanctions still apply.¹⁵

From Aden, YEMAC operated with some 550 staff mainly active in Abyan, Aden, Amran, Hadramaut, Lahej, and Taiz governorates. YEMAC also has offices in Mokha and Mukhalla and in 2019 opened offices in Taiz to support operations around Hodeida and in Marib for operations in al-Jawf governorate.¹⁶ Overall, UNDP reported that YEMAC conducted clearance in 19 of Yemen's 21 governorates.¹⁷

In April 2020, YEMAC opened the Yemen Mine Action Coordination Centre (YMACC) in Aden to strengthen programme management in areas controlled by the IRG. YEMAC's executive director oversees the coordination centre but YMACC is tasked with coordinating YEMAC's operational units. YMACC is intended to facilitate cooperation with international demining organisations and is responsible for accrediting and tasking them. It will also have departments for planning, information management, and quality assurance/quality control.¹⁸ The centre convened its first coordination meeting on 9 April 2020 and by early 2021 it employed 44 people¹⁹ and had set up technical working groups focused on non-technical survey and explosive ordnance risk education.²⁰ Yemen's Article 7 transparency report said YMACC's accreditation and quality management

(QM) capacity would be developed in 2021 but this was delayed, mainly as a result of the COVID-19 pandemic.²¹

Mine action stakeholders say the creation of YMACC has improved coordination with operators significantly, helped by regular meetings of technical working groups attended by UNDP and implementing partners, but its legal status is unclear, it lacks clear powers to coordinate mine action, and decision-making boundaries between YEMAC and YMACC are opaque. Other institutions significantly involved in decision-making or administrative procedures significantly affecting mine action include the Ministry of Planning and International Cooperation (MOPIC), the National Security Agency, and the Ministry of Defence, while mine action stakeholders also point to interventions by the Saudi Ministry of Defence Evacuation & Humanitarian Operations Centre (EHOC).

UNDP provides technical and administrative support to YEMAC through a project carried out by three international and ten national staff working from a number of different offices. The UN supported mine action in Yemen from 1999 to 2003 through a programme implemented by the UN Office for Project Services (UNOPS). From 2003, the programme came under full national management. UNDP deployed an international adviser to YEMAC at the end of 2014 to support planning and programme management. At the end of 2020, its Sana'a office comprised two international staff, including a chief technical adviser, and three national staff; in Aden it had four international and two national staff. UNDP also had national field staff in Hodeida, Mokha, and al-Mukalla.²² UNDP contracted TDI to provide training courses in non-technical survey and explosive ordnance disposal and hired a Yemeni company, Prodigy Systems, to provide third-party verification of operations.

GENDER AND DIVERSITY

Yemen's Anti-Personnel Mine Ban Convention (APMBC) Article 5 deadline extension request submitted in 2019 made no reference to gender and in that year YEMAC rejected a suggestion that women might be included in training for demining teams. YEMAC has since stated it needs and plans to develop the employment of women in mine action, and in 2020 started training female staff for explosive ordnance disposal, non-technical survey, and risk education.²³ UNDP has encouraged YEMAC to mainstream gender principles and to deploy an all-women survey team in areas controlled by the internationally recognised government.²⁴ Yemen said it understands the different needs of girls, women, men and boys and considers these in its planning.²⁵

YEMAC reported employing six women at the beginning of 2020. But YEMAC and YMACC reportedly employed 34 women by the end of 2020, many of them in operational roles. They included the first female bomb disposal expert who was trained in August 2020. At the end of the year, YEMAC had two female EOD operators deployed in Hadramaut and 10 women assigned to non-technical survey. Yemen said it had 15 women working in risk education to ensure the different needs of women and girls, as well as boys and men, were addressed. They included five female emergency risk education staff, with ten other women employed as risk education facilitators in Abyan, Aden, Al Dhale, and Lahej, as well as on the West Coast, and two women employed in administration in Taiz.²⁶ YEMAC said it planned to recruit 30 additional staff for non-technical survey in 2021, of whom 10 would be women.²⁷ It also recruited a number of other women in 2021, mainly for administrative jobs, but the first female information management officer was contracted in July 2021.²⁸

Among international operators, Danish Refugee Council Humanitarian Disarmament and Peacebuilding Sector (DRC; previously Danish Demining Group, DDG) employed seven women in 2020 in risk education/non-technical survey, three of whom were based in Aden supporting activities in Lahej governorate, with three more in Mokha supporting work in Taiz, and one in Al Khokha supporting activities in Hodeida governorate.²⁹ The HALO Trust employed six women among its thirty-four national staff, including two in operations with community outreach and risk education teams and four in support roles.³⁰

Recruitment of women for jobs in mine action in Yemen's conservative society faces significant cultural obstacles, in part due to their position as responsible for family care, which discourages women from applying for jobs. Operators report cases where husbands have forbidden women applicants from attending interviews. However, the humanitarian crisis in Yemen may also be eroding traditional gender roles by increasing families' dependence on the income contributed by women to family budgets.³¹ Risk education is conducted separately for women, often by female staff, to encourage participation of women, who are considered valuable informants on account of their knowledge of local conditions acquired carrying out family chores such as collecting wood and herding livestock.³² DRC has found that men often took the lead in field activities overlooking the participation of women colleagues and even women in leadership positions can face bullying and disrespect from male subordinates.³³

INFORMATION MANAGEMENT AND REPORTING

YEMAC, with support from UNDP and the Geneva International Centre for Humanitarian Demining (GICHD), upgraded its headquarters IMSMA database, installing the latest Core version. UNDP reported it was operational from September 2020 but the capacity to set up different user accounts and create field scenarios or maps was still in development.³⁴ The system was being installed in YMACC in early 2021.³⁵ YEMAC's northern office works with an older IMSMA system.³⁶

UNDP recruited a full time information management (IM) officer in 2020 through MSB, the Swedish Civil Contingency Agency, and had recruited national IM staff to assist but due to COVID-19 restrictions he had not deployed to his post in Aden as of

mid-2021 and was working remotely with YEMAC and YMACC.³⁷ GICHD also contracted an IMSMA expert from DRC to support the roll-out of IMSMA Core.³⁸ HALO Trust supported efforts to strengthen information management, holding one IM workshop for YMACC staff in late 2020 and planning follow-up sessions in 2021.³⁹

YEMAC and UNDP had already started preparing data collection forms for risk education, non-technical survey, and EOD spot tasks, which were developed in consultation with participants in an information management technical working group. Initial versions were circulated among operators in late 2020 and early 2021. The forms were still under development as of writing.⁴⁰ Yemen described the technical working group as “one of the vital groups within the sector”.⁴¹

The extent of the data available in 2020 was unclear but appears to have been limited. YEMAC had previously acknowledged that contamination data was out of date,⁴² and the UN has observed that Yemen’s conflict had “changed the extent and complexity of contamination dramatically”.⁴³ The IMSMA Core database incorporates data from non-technical survey and EORE sessions but very little systematic non-technical survey was conducted in 2020. A complicating factor is that a significant proportion of YEMAC personnel have been seconded to work with Project Masam and SafeLane, which have reportedly declined to share data and are not reporting detailed operating results to YEMAC.

PLANNING AND TASKING

Yemen does not have a current strategic plan or annual work plans for tackling mines, cluster munitions, or other ERW. Mine action in 2020 continued to be conducted on an emergency basis.⁴⁴ In addition to emergency clearance, YEMAC identified its priorities for 2021 as conducting baseline survey in line with Yemen’s latest Article 5 deadline extension request, expanding risk education, improving coordination with humanitarian agencies in identifying operating priorities, and updating standing operating procedures (SOPs) and National Mine Action Standards (NMAS).⁴⁵

YMACC said its priorities in 2021 included planning survey and clearance in conjunction with operators; directing implementation of the baseline survey, accrediting and tasking mine action organisations; building up operational capacity; mobilising donor support; and prompt investigation of demining accidents.⁴⁶

Yemen reported that UNDP and YEMAC have drawn up a table for prioritising tasks based on the needs of aid organisations in the humanitarian cluster. It said implementing partners are able to request clearance tasks from YEMAC by entering details of the contamination and planned actions, which are then prioritised based on needs identified by local authorities and the UN aid coordination agency.⁴⁷ Operators said the matrix system was not operational in 2020 and after the opening of YMACC in April 2020 tasks for international NGOs were largely authorised through direct contact with YMACC.⁴⁸

In the absence of any available survey data, HALO Trust said it determined priorities according to where security conditions permit access, operations can be conducted safely and under supervision of international staff. EOD task orders also needed to be supplemented by permission from the “Security Belt Forces” which control Aden, Lahej, and some other southern areas in order to allow movement of explosive items to demolition sites.⁴⁹

YMACC issued the first task orders for non-technical survey and EORE to DDG in July 2020 and the first task order for clearance to The HALO Trust, marking a significant step

toward improved planning and coordination.⁵⁰ However, differences between YEMAC and YMACC on some tasks implemented in 2020 pointed to coordination challenges. In addition, Project Masam, the biggest international operator funded by Saudi Arabia, is tasked separately through an opaque process YEMAC described as “joint management” that provided no task details or results accessible to the rest of the mine action sector and occasionally resulted in duplication of effort.⁵¹

Yemen’s bureaucratic procedures are also proving a significant obstacle to progress. Operators are required to conclude a separate sub-agreement with MOPIC for every donor-funded project. Despite the priority YEMAC has given to survey, MOPIC resisted proposals for non-technical survey submitted in 2020 arguing that it was unnecessary and the focus should be on clearance.

Operators were limited in the tasks they could undertake in 2020 because of capacity constraints resulting in part from cumbersome and opaque procedures for importing equipment, including detectors and personal protective equipment (PPE). After initial approval by MOPIC, applications to import equipment are forwarded to a range of government departments including, but not limited to, the ministries of Defence, Foreign Affairs, and Interior and the National Security Agency before returning to YEMAC for technical approval and then to MOPIC for final approval. Implementing partners say the process can take six months, sometimes more, and end without approval without explanation of the decision.

Mine action sector sources say Saudi interference appears on occasion to have been a factor stalling approval for equipment imports.⁵² The HALO Trust received permission from MOPIC and the NSA to import ballistic glass and high-hardness steel required for armouring mechanical assets but delivery was held up for six months within the Saudi MOD Evacuation & Humanitarian Operations Centre (EHOC) before eventual approval.⁵³

LAND RELEASE SYSTEM

STANDARDS AND LAND RELEASE EFFICIENCY

YEMAC identified issuing new NMAS as a priority in 2021.⁵⁴ Yemen's existing NMAS were based on the International Mine Action Standards (IMAS) when they were drawn up in 2007, predating most of Yemen's CMR contamination. In 2019, YEMAC acknowledged that the standards were obsolete and said SOPs based on the standards were not consistently applied by its clearance personnel.⁵⁵

YEMAC was in contact with the GICHD in 2020 on developing national standards, focusing on standards for survey and clearance.⁵⁶ YMACC, as one of its first acts following its opening in April 2020, started reviewing a draft of interim national standards.⁵⁷ Yemen reported it had set up a 14-person committee on in September 2020 to update Yemen's NMAS with support from UNDP, and by late April 2021 it said an Arabic language version was 95% complete.⁵⁸ The revised standards include a draft standard for improvised mine and improvised explosive device (IED) disposal.⁵⁹ The HALO Trust drafted an NMAS for risk education and helped to update the NMAS for mechanical clearance.⁶⁰

OPERATORS AND OPERATIONAL TOOLS

Yemen is building cooperation with international operators to supplement national capacity and develop capabilities for survey and clearance which it acknowledges have fallen below international standards. Yemen's political and security crisis has hampered the process and it acknowledged in 2021 that "this process is still not fully bedded in" but despite complex bureaucratic hurdles and access difficulties compounded by the Covid-19 pandemic the arrangements agreed with international operators have established a platform YEMAC hoped would help to accelerate movement on its operating priorities.⁶¹

YEMAC, in addition to its role managing Yemen's mine action, is also the major operator and the only demining organisation with capacity in Houthi-controlled areas of the north. YEMAC's northern operation reportedly employed 494 personnel making up around 30 clearance teams that has operated mainly in Sana'a, the northernmost governorate of Saada, bordering Saudi Arabia, and northern districts of Almaran governorate.⁶² However, the UN reported YEMAC had limited resources to support operations in the north in 2020 and most assets were concentrated in the south. At the end of 2020, YEMAC reported having a staff of 491 in the south, including 30 manual clearance teams with 272 personnel, 15 non-technical survey teams with 60 staff, 7 technical survey teams with 49 staff, and 2 EOD teams with 22 people.⁶³ YEMAC hoped to deploy the non-technical survey teams in 2021.⁶⁴

In 2019, YEMAC took delivery of 40 pick-up trucks, 16 ambulances, 16 trucks, two back-hoe loaders, and two truck-mounted cranes. Vehicles were divided equally between the Sana'a and Aden programmes.⁶⁵ In 2020, YEMAC's southern operation took delivery from UNDP of 300 Italian metal detectors and 36 pick-up trucks⁶⁶ but it said it was still challenged by a chronic lack of equipment such as medical kits and vehicles.⁶⁷

Project Masam, implemented by SafeLane/Dynasafe, much the biggest international organisation conducting area clearance in 2020, was supported by annual funding of around US\$30 million in 2020 from Saudi Arabia's government provided through the King Salman Relief and Rehabilitation Fund. It has reportedly received US\$133 million since it started work in 2018.⁶⁸ A similar level of Saudi funding was reportedly under discussion for 2021. In 2020, it operated a total of 32 clearance teams with staff seconded from YEMAC in areas controlled by the IRG, which reportedly

included Aden, Taiz, Hodeida, Marib, Shabwah, Al Bayda, Al Jawf, the Al-Kitaf wa Bogee district of Saada, Al Dhale, and Lahej.⁶⁹

DDG (rebranded in 2021 as DRC) concluded a new Memorandum of Understanding with YEMAC in 2020. This allowed it to expand its Aden-based programme to 28 staff in 2020, including four internationals: a programme manager and operations manager based in Aden and two technical field managers in Mokha. Its 24 national staff included 20 risk education/non-technical survey personnel in Aden and Mokha together with 3 medics and an Aden-based information officer recruited with funding from the GICHD to support YMACC's development of IMSMA Core capacity. In 2021, DRC expected to deploy three multi-task teams comprising personnel seconded from YEMAC to conduct risk education, non-technical and technical survey, EOD spot tasks, and small area clearance tasks, subject to being able to import the necessary equipment.⁷⁰

The HALO Trust opened an office in Aden at the start of February 2020 and by the end of the year had 5 international and 34 national staff, including 16 personnel seconded from YEMAC making up 4 multi-task teams as well as a community outreach and risk education team consisting of 4 directly recruited staff. HALO Trust expected to add at least 20 more national staff in 2021, 16 of them in operational roles and 4 in support jobs, with a view to expanding non-technical survey and mechanical clearance. HALO Trust received approval in 2020 to import ballistic glass and specially hardened steel for armouring mechanical assets but eight months after applying to import detectors and PPE HALO had not yet received the necessary clearance.⁷¹

After long delays caused by security developments and the COVID-19 pandemic, Norwegian People's Aid (NPA) support for YEMAC's mine detection dog (MDD) programme started to move forward in 2020. By mid-2020, NPA had 12 long-leash dogs under training at its centre in Bosnia and Herzegovina pending transfer to Yemen once YEMAC handlers underwent training.⁷² NPA had provided technical advice on setting up kennels and an MDD training area at YEMAC's training centre. NPA trainers arrived in Aden in November 2020 and were preparing to start training but in early 2021 were still awaiting completion of registration procedures.⁷³

DEMINER SAFETY

YEMAC reported one deminer was killed and four injured in 2020, adding to the already heavy loss of life from explosive hazard management incidents in Yemen in the past three years.⁷⁴ It represented a significant fall in casualties from the 20 reported in 2019, mainly as a result of IED detonations, and follows the introduction of IED disposal training provided by UNDP to nine EOD teams.⁷⁵

Project Masam implemented by SafeLane reported a team leader was killed by an anti-personnel mine in western Taiz governorate in April 2020. The project's managing director, Ousama Algosaihi, said at the time that the project, which started operating in May 2018, had "offered until now 21 martyrs and more than 16 wounded, most of whom lost their limbs."⁷⁶ Nearly all the more than 37 recorded casualties are believed to have occurred in 2019. They include five international staff killed in a single incident in January 2019.⁷⁷ Seven SafeLane deminers were killed in April 2019 by an explosion in a storage area holding mines and ERW for destruction in the port city of Mokha.⁷⁸ Project Masam has not undergone independent investigation and verification to inform the sector on circumstances surrounding its casualties, thought to be among the highest recorded by single project.

LAND RELEASE OUTPUTS AND ARTICLE 5 COMPLIANCE

Against the background of Yemen's continuing conflict, YEMAC is focused on delivering an emergency response to mitigate the threat to civilians posed by all forms of explosive hazard rather than conducting area clearance of minefields.

Mine action sector plans suffered setbacks in 2020 due to internal and external COVID-19 control measures, including a lockdown, movement restrictions, and closure of Aden airport between March and July. As a result, DDG said the majority of its programme's international staff, including the programme manager, operations manager, and two technical field managers were delayed from deploying.⁷⁹ HALO Trust reported that the inability of its medevac provider to access Yemen in this period forced suspension of operations that had just started in March 2020 and teams that had undergone EOD, battle area clearance (BAC), and medical training between November 2019 and February 2020 were suspended on full pay.⁸⁰

LAND RELEASE OUTPUTS IN 2020

Yemen reported clearance of a total of 3.13km² of battle areas in 2020, fractionally more than the previous year, according to data provided by UNDP (see Table 1), although the number of anti-personnel mines destroyed in 2020 fell by close to 40% from the previous year. Available data did not differentiate between improvised mines and IEDs.⁸¹

Table 1: YEMAC clearance of mines and ERW (reported by UNDP)⁸²

Year	Total area cleared (m ²)	AP mines destroyed	IEDs destroyed	AV mines destroyed	CMR	Other UXO destroyed
2019	3,115,830	1,536	786	10,091	7,071	41,687
2020	3,132,896	923	512	5,317	403	54,108

SURVEY IN 2020

Yemen's Article 7 transparency report for 2020 showed it did not release any mined area through non-technical or technical survey in 2020. DRC said it received five task orders from YMACC in 2020 to conduct non-technical survey in three governorates, Taiz, Hodeida and Lahej. It reported that it identified 42,448,222m² as confirmed hazardous area and another 10km² as suspected hazardous areas drawing on evidence ranging from accidents, the presence of explosive ordnance, and previous demining sites to the presence of unused land and damage to infrastructure.⁸³

CLEARANCE IN 2020

The 3km² reportedly cleared in 2020 included mined areas but consisted mainly of areas targeted for clearance on an emergency basis irrespective of the types of explosive ordnance contaminating them. In the absence of disaggregated data, Mine Action Review calculates from the 'battle' area cleared and number of mines destroyed that Yemen's mine action programme has cleared an area of at least 1km² (see Table 3). Averaging the number of anti-personnel mines cleared per square kilometre across five other programmes that cleared between 1km² and 3km² of land in 2020 would suggest a figure double that of 1km², but a conservative estimate has been applied to Yemen.

HALO Trust reported clearing a little over 200,000m² of battle area in 2020 resulting in the destruction of 3,274 items of unexploded ordnance but no anti-personnel mines.⁸⁴ DRC reported that it was unable to conduct mine clearance or spot-task EOD of mines pending conclusion of sub-agreements and receiving approvals for importing equipment.⁸⁵

The amount of area cleared by Project Masam's 32 teams is not known. Saudi funding for the project is more than double international funding for the rest of Yemen's mine action programme but Project Masam declines to share details of its activities on grounds of commercial confidentiality. Project Masam reports clearing 3,962 anti-personnel mines between July

2018 and July 2021 together with 83,643 anti-vehicle mines, 6,058 explosive devices, and 169,758 items of UXO.⁸⁶ These results are not independently verified and are not reflected in official Yemeni reporting. Yemen's Article 7 report attributed clearance of 858 anti-personnel mines to Project Masam in 2020.⁸⁷

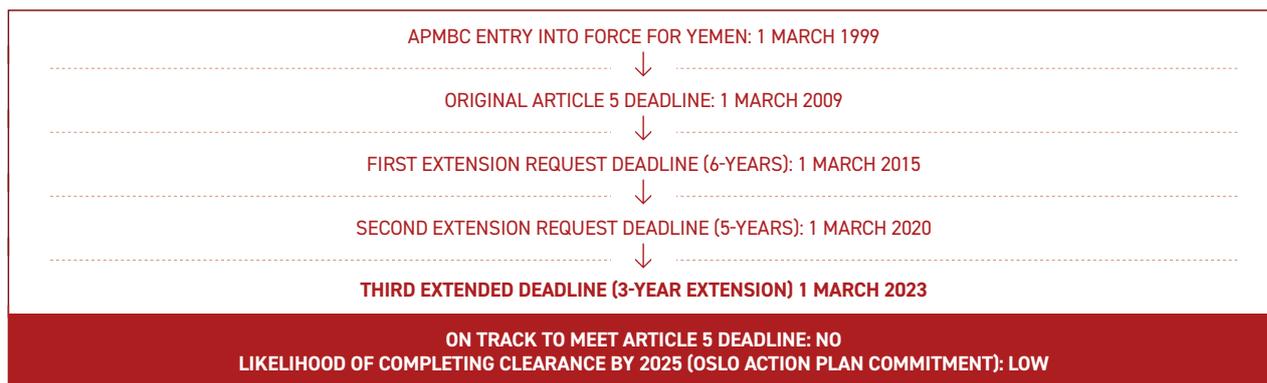
YEMAC reported destruction of a total of 1,388 anti-personnel mines in 2020 but this was 50% more than recorded in UNDP data and the basis for this number was not clear. It said YEMAC accounted for clearance of 495 anti-personnel mines and 2,679 anti-vehicle mines in 2020, mostly in Hodeida, Lahej, and Taiz (see Table 2), but gave no indication of mines destroyed by other operators.⁸⁸

In addition, the Saudi-led Coalition also reportedly destroyed 171 sea mines in 2020.⁸⁹

Table 2: YEMAC clearance results (2020)⁹⁰

Governorate	AP mines destroyed	AV mines destroyed	IEDs destroyed	UXO destroyed
Abyan	8	29	16	308
Aden	26	7	5	7,043
Al Dhale	72	4	27	92
Hadramaut	12	4	139	8,751
Hodeida	35	1,721	105	265
Lahej	99	358	53	1,690
Taiz	243	556	48	2,074
Totals	495	2,679	393	20,223

ARTICLE 5 DEADLINE AND COMPLIANCE



Under Article 5 of the APMBC (and in accordance with the three-year extension granted in 2019), Yemen is required to destroy all anti-personnel mines in mined areas under its jurisdiction or control as soon as possible, but not later than 1 March 2023. But the Article 5 deadline extension request Yemen submitted in 2019 asked for three years as only an interim arrangement to allow implementation of a baseline survey. Yemen proposed to use the data from that survey to submit an evidence-based request for another extension setting out plans for clearance in 2023.

By the start of 2021, YEMAC and its implementing partners had been able to carry out only minimal amounts of survey and, against a background of unabated conflict in Yemen in 2021, there was no realistic prospect that it would be able to complete a nationwide baseline survey within the third extension period.

Helped by increasing international engagement with mine action, Yemen has, however, started to put in place some of the essential elements for implementing a baseline survey and some clearance, at least in areas controlled by the IRG. TDI, under contract to UNDP, arrived in November 2020 and provided YEMAC training in issuing task orders and quality

management. In 2021, it started delivering non-technical survey training to YEMAC teams.⁹¹ Since the start of 2020, UNDP has run six courses on identification and disposal of IEDs, including improvised mines, generating 18 teams with the capability to tackle improvised devices semi-remotely. By early July 2021, they had removed 369 devices without casualties, freeing up other YEMAC teams in the process to address other explosive hazards.⁹²

However, progress in Houthi-controlled areas appears largely contingent on an end to conflict and an elusive political settlement that lifts current sanctions and restrictions on access to equipment. In IRG-controlled areas, limitations on access resulting from the conflict also obstruct progress but institutional weaknesses and capacity constraints have also posed a major obstacle. Poor coordination between government departments and bureaucratic obstacles to bringing in demining equipment have obstructed implementation of the national authority's states policy and plans. Meanwhile, Saudi-backed Project Masam, managed by SafeLane, the most richly-resourced operator in Yemen, also emerged as an increasing source of contention within the mine action sector obstructing efforts

to develop systematic survey and clearance by declining to share information to support the baseline survey or inform other operators of where it has worked.

Yemen's inability even to start a baseline survey that was due for completion by March 2023 has undermined the central objective of its current Article 5 deadline extension request and underscores the need for an updated mine action strategy, clarifying what Yemen aims to achieve with increased capacity and INGO participation. YEMAC received proposals for launching a Yemen Baseline Survey project in a workshop involving UNDP, TDI, DDG, and HALO Trust in early 2021 but has yet to respond.⁹³ UNDP has assessed that "YEMAC/YMACC seem to be slowly embracing change and realising that existing structures need to change",⁹⁴ but they may need to accelerate to compete effectively for donor support.

Table 3: Five-year summary of AP mine clearance

Year	Area cleared (km ²)
2020	*1.0
2019	*1.0
2018	*0.1
2017	*1.0
2016	*3.0
Total	*6.1

* Mine Action Review estimates

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- 5 J. Gambrell and M. Harb, "Landmines will be hidden killer decades after war", *Associated Press*, 24 December 2018.
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- 13 Article 7 Report (covering 2018), Form A.
- 14 UNDP, "Emergency Mine Action Project, Annual Progress Report 2019", 20 January 2020, pp. 7, 14.
- 15 Interview with Ameen Saleh Alaqili, Director, YEMAC, in Geneva, 13 February 2020; Zoom interview with Gareth Collett, UNDP, 20 July 2021.
- 16 2019 APMB Article 5 deadline Extension Request, pp. 5 and 22; and email from Stephen Robinson, UNDP, 21 July 2020.
- 17 UNDP Annual Report 2020, February 2021, p. 9.
- 18 UNDP, "Emergency Mine Action Project, Annual Progress Report 2019", 20 January 2020, p. 12.
- 19 Emails from Ameen Saleh Alaqili, YEMAC, 5 May 2021; and Stephen Robinson, Senior Technical Adviser, UNDP, 27 May 2020.
- 20 UNDP Annual Report 2020, p. 14.
- 21 Article 7 Report (covering 2020), Form D; email from Stephen Robinson, UNDP, 7 August 2021.
- 22 UNDP, "Emergency Mine Action Project, Annual Progress Report 2019", 20 January 2020, p. 9; and interview with Stephen Robinson, UNDP, in Geneva, 20 July 2020.
- 23 Email from Ameen Saleh Alaqili, YEMAC, 5 May 2021; UNDP Annual Report 2020, p. 15.
- 24 UNDP Annual Report 2020, p. 15; UNDP, "Emergency Mine Action Project, Annual Progress Report 2019", 20 January 2020, p. 21.
- 25 Article 7 Report (covering 2020), Form D.
- 26 Email from Ameen Saleh Alaqili, YEMAC, 5 May 2021; UNDP Annual Report 2020, p. 8; and Article 7 Report (covering 2020), Form D.
- 27 Article 7 Report (covering 2020), Form D.
- 28 Email from Stephen Robinson, UNDP, 7 August 2021.
- 29 Email from Esteban Bernal, Programme Manager, Humanitarian Disarmament and Peace Building, DRC, 23 March 2021.
- 30 Email from Matthew Smith, Programme Manager, HALO Trust, 17 May 2021.
- 31 Email from Marie-Josée Hamel, Regional Programme Advisor – Middle East, DRC, 9 August 2021.
- 32 Email from Esteban Bernal, DRC, 23 March 2021.
- 33 Ibid.; and email from Marie-Josée Hamel, DRC, 16 April 2020.
- 34 UNDP Annual Report 2020, p. 13; and email from Esteban Bernal, DRC, 23 March 2021.
- 35 Interview with Stephen Robinson, Senior Technical Adviser, UNDP, Geneva, 23 March 2021.
- 36 Email from GICHD, 30 April 2020.
- 37 UNDP Annual Report 2020, p. 13; Article 7 Report (covering 2020), Form D.
- 38 Email from Stephen Robinson, UNDP, 7 August 2021.
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- 41 Article 7 Report (covering 2020), Form D.
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