

ARTICLE 5 DEADLINE: 1 MARCH 2023
 FIVE-YEAR EXTENSION REQUESTED TO 1 MARCH 2028

KEY DATA

**ANTI-PERSONNEL (AP)
 MINE CONTAMINATION: HEAVY
 NO CREDIBLE ESTIMATE**

AP MINE
 CLEARANCE IN 2021

1.5km²

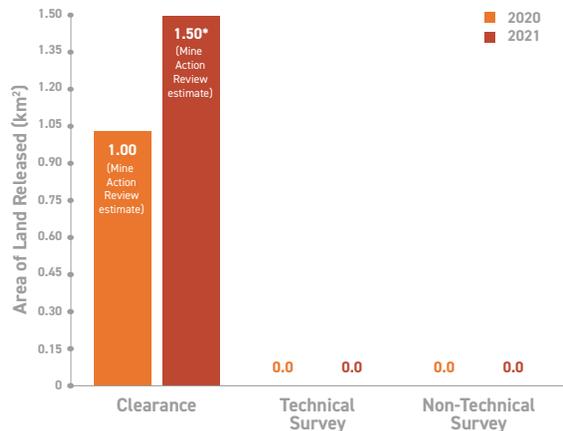
(MINE ACTION
 REVIEW ESTIMATE)

AP MINES
 DESTROYED IN 2021

1,676

(BASED ON UNDP DATA)*

LAND RELEASE OUTPUT



* Does not include results of Project Masam mine clearance operations.

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

KEY DEVELOPMENTS

The Yemen Executive Mine Action Centre (YEMAC) embarked on the Yemen baseline survey (YBLS) in southern areas controlled by the internationally recognised government in April 2021 with support from Danish Refugee Council (DRC) and, from October 2021, The HALO Trust. By April 2022, it had identified 90km² of confirmed and suspected areas affected by explosive ordnance, including conventional and improvised mines. In the north, Houthi authorities agreed in November 2021 to create a coordination centre similar in function to the Yemen Mine Action Coordination Centre (YMACC) in Aden, but as of June 2022 had taken no action to implement the agreement. In March 2022, Yemen requested a fourth extension of its Article 5 deadline, seeking a further five years.

RECOMMENDATIONS FOR ACTION

- Houthi authorities and the forces that support them should halt the emplacement of mines and improvised devices and conform to the obligations of the Anti-Personnel Mine Ban Convention (APMBC).
- YEMAC and YMACC should develop a mine action work plan setting clear targets for survey and clearance of mines and explosive remnants of war (ERW).
- YMACC should clarify criteria for prioritising non-technical survey and clearance.
- YEMAC should engage with other government departments to facilitate importation of demining equipment and the issuance of visas to staff of its international implementing partners.
- YEMAC/YMACC should provide annual updates on the progress and findings of the Yemen Baseline Survey detailing the area surveyed, confirmed hazardous areas and suspected hazardous areas identified (by governorate), and the types of explosive ordnance identified, including anti-personnel mines of an improvised nature.
- The Supreme Council for the Management and Coordination of Humanitarian Affairs (SCMCHA) and YEMAC North should facilitate access of international mine action agencies and operators.
- The SCMCHA and YEMAC North should expedite the creation of a coordination office.

ASSESSMENT OF NATIONAL PROGRAMME PERFORMANCE

Criterion	Score (2021)	Score (2020)	Performance Commentary
UNDERSTANDING OF CONTAMINATION (20% of overall score)	4	3	YEMAC embarked in mid 2021 on a baseline survey to assess mine and other explosive ordnance contamination but survey capacity was limited and progress was insufficient to determine the extent of contamination in any of Yemen's 22 governorates. In the 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	4	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, undermining its national role and leaving YEMAC North subject to Coalition sanctions. YEMAC's two components do not coordinate their activities. YEMAC South opened a coordination centre in the south in 2020 to develop partnerships with international organisations as part of UN-supported moves to strengthen the programme. YEMAC North reached agreement with de facto authorities on setting up a similar coordination body in the north but, as of August 2022, no follow-up action had been reported.
GENDER AND DIVERSITY (10% of overall score)	5	5	Yemen's 2022 Article 5 deadline extension request identifies inclusion of women as a priority and YEMAC in the south has taken steps to employ women in field operations as well as office roles. In 2020, it trained the first female bomb disposal operator and deployed a number of female staff for explosive ordnance risk education and non-technical survey. In 2021, YEMAC planned to include 10 women among 30 candidates for non-technical survey training. The extension request states "there is no objection to including more women."
INFORMATION MANAGEMENT AND REPORTING (10% of overall score)	4	4	YEMAC, with support from UNDP and the Geneva International Centre for Humanitarian Demining (GICHD) installed Information Management System for Mine Action (IMSMA) Core in 2021 while the North works with a much older New Generation database. Data available on results of survey and clearance are not comprehensive. Yemen has regularly submitted APMBC Article 7 transparency reports but its latest report (covering 2021) provided limited information on the progress of survey and clearance.
PLANNING AND TASKING (10% of overall score)	5	5	Yemen's mine action continues to provide an emergency response focused on life-saving interventions and civilian infrastructure rather than systematic or planned clearance. Its Article 5 extension request identifies priority areas of activity, including particularly the baseline survey, but does not set out a detailed work plan. In the south, tasks are issued by YMACC but criteria for prioritising are unclear.
LAND RELEASE SYSTEM (20% of overall score)	4	4	YEMAC reports it is revising and updating 95% of its national mine action standards (NMAS). It reported it had revised 32 chapters of NMAS in 2021, including standards relating to land release, and that these were compliant with the International Mine Action Standards (IMAS) and the Oslo Action Plan. The new standards have yet to be approved by the government and were not yet in effect as of August 2022.
LAND RELEASE OUTPUTS AND ARTICLE 5 COMPLIANCE (20% of overall score)	6	6	YEMAC requested a five-year extension to its Article 5 deadline in March 2022 so as to achieve the goal of its existing extension period by conducting a baseline survey. YEMAC's emergency response operations reportedly cleared 4.5km ² of battle area in 2021, up from 3.1km ² the previous year, and a destroyed substantially higher number of items of explosive ordnance but it has yet to undertake systematic area clearance of mined land. The Saudi-funded Project Masam reported clearance of 10.8km ² of mined area but its results are not independently quality assured and do not appear in Yemen's Article 7 report. No data are available on any clearance or survey conducted in the Houthi-controlled north.
Average Score	4.6	4.4	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 Humanitarian Disarmament and Peacebuilding Sector (DRC)

- The HALO Trust
- Norwegian People's Aid (NPA)
- Project Masam/SafeLane Global/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 has heavy contamination by conventional and improvised anti-personnel mines and a wide array of other explosive ordnance but the extent is not known after seven years of conflict in which all parties have extensively used landmines. In addition, areas previously cleared have been re-contaminated and shifting conflict lines have hindered systematic survey. A baseline survey started in April 2021 in areas controlled by the internationally recognised government (IRG) based in Aden had identified 90km² of contamination by April 2022.¹

Results of the baseline survey conducted in 2021 and published in Yemen's revised Article 5 extension request identified contamination in six governorates totalling 80.54km² (see Table 1). This included 45 suspected hazardous areas (SHAs) totalling 18.52km² and 144 confirmed hazardous areas (CHAs) totalling 62.03km², with one-third of the total located in Hodeida governorate.² YEMAC reported later that the contamination identified through non-technical survey in 2021 amounted to 78.42km², including SHAs totalling 18.24 km² and CHAs totalling 60.18km². YEMAC said that through technical survey it identified additional SHAs amounting to 0.28km² and CHAs amounting to 1.72km².³

Table 1: Results of Yemen Baseline Survey 2021⁴

Governorate	SHAs	SHA area (m ²)	CHAs	CHA area (m ²)	Total area (m ²)
Abyan	0	0	35	11,694,095.0	11,694,095.0
Aden	8	1,359,208.9	25	3,656,949.7	5,016,158.6
Al-Dhale	4	649,941.7	11	3,055,853.0	3,705,794.7
Hodeidah	7	6,647,249.9	15	19,906,088.4	26,553,338.3
Lahj	20	9,220,679.7	31	7,855,656.1	17,076,335.8
Taiz	6	638,491.1	27	15,858,393.8	16,496,884.9
Totals	45	18,515,571.3	144	62,027,036.0	80,542,607.3

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.⁵ Houthi officials have acknowledged using landmines⁶ and have reportedly laid large numbers of improvised explosive devices (IEDs), 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.⁷ Contamination is especially high along Yemen's west coast where mines were placed 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 and 2021. 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.⁸

1 Email from Marie Dahan, Partnership & Coordination Analyst, UNDP, 1 June 2022.

2 2022 Article 5 deadline extension request (revised), August 2022, pp. 8–9.

3 Email from Ameen Saleh Al-Aqili, Director, YEMAC, 20 September 2022.

4 2022 Article 5 deadline extension request (revised), August 2022, pp. 8–9.

5 Letter from the Panel of Experts on Yemen to the President of the Security Council (S/2021/79), 25 January 2021, pp. 3, 44.

6 J. Gambrell and M. Harb, "Landmines will be hidden killer decades after war", *Associated Press*, 24 December 2018.

7 UNDP Yemen, "Emergency Mine Action Project – Yemen Phase Five Termination, Evaluation Brief EMA Project", 2 August 2021.

8 "Yemen land mine kills six in convoy carrying defense minister, who is unharmed", *Reuters*, 19 February 2020.

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.⁹ 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.¹⁰

A range of newly-emplaced and/or new types of mines and improvised devices that Project Masam reported encountering in 2021 included bounding fragmentation mines activated both by tripwires, sometimes multiple tripwires, and/or pressure plates. They also observed increasing use of secondary explosive devices linked to mines or IEDs (and therefore targeting deminers), and the emplacement of improvised devices with a very large explosive charge in buildings.¹¹

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 the Houthis (Ansar Allah) movement controlling the capital Sana'a and much of the north and west (the DFA), and the IRG, operationally based in Aden and the south. The Sana'a-based interministerial National Mine Action Committee (NMAC), which previously formulated national mine action policy, is no longer recognised by the IRG, which reported it had disbanded in 2019. In the south, YEMAC has fulfilled a double role of regulator responsible for policy and planning while also serving as the sole national operator.¹²

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 2019.¹³ The United Nations Development Programme (UNDP) reported that in 2020 YEMAC conducted clearance in a total of 19 of Yemen's 21 governorates.¹⁴ In practice, however, YEMAC has split into two, centred round Sana'a and Aden. YEMAC South informed Mine Action Review there was no coordination between the two because YEMAC North was under the control of Houthi militias.¹⁵ Yemen's mine action continues to be almost entirely dependent on international donor support. YEMAC said government funding only covered costs of its staff.¹⁶

YEMAC North employed around 495 staff in 2021, working in northern governorates controlled by Houthi forces.¹⁷ It manages all aspects of mine action including survey and clearance, risk education, victim assistance, information management, and quality management, but with much less

equipment and assets than available to the south. YEMAC North and the Supreme Council for the Management and Coordination of Humanitarian Affairs (SCMCHA) agreed in November 2021 to set up a coordination centre but did not commit to a timeline for implementing it, and as of June 2022 it had not been created.¹⁸

In the south, YEMAC operated with some 650 staff¹⁹ mainly active in Abyan, Aden, Amran, Hadramaut, Lahj, and Taiz governorates. YEMAC also has an office in Mokha, and in 2019 it opened offices in Taiz to support operations around Hodeida, and in Marib for operations in al-Jawf governorate.²⁰ YEMAC said at the time that it had set up "skeleton" offices using its own resources pending receipt of financial support from UNDP.²¹ YEMAC's Article 5 deadline extension request, submitted in March 2022, said YEMAC was planning to open an office in Marib to support operations in Al Bayda, Al Jawf, and western Shabwah governorates. Operations included explosive ordnance disposal (EOD) spot tasks, non-technical survey, and risk education.²²

YEMAC South opened the YMACC in Aden in April 2020 in order to strengthen programme management in areas controlled by the IRG. The centre, which is intended to facilitate cooperation with international organisations, has responsibility for accrediting organisations and issuing task orders. It has departments for planning, information management, and quality assurance/quality control.²³ The centre convened its first coordination meeting on 9 April 2020, and by early 2021 it was employing 44 people.²⁴ It had set up technical working groups focused on non-technical survey and risk

9 Letter from the Panel of Experts on Yemen to the President of the Security Council (S/2021/79), 25 January 2021, p. 44.

10 Email from Gareth Collett, Chief Technical Adviser – Counter IED, UNDP, 6 July 2021; and zoom interview, 20 July 2021.

11 Email from Ousama Algosaibi, Project Manager, Project Masam, 29 May 2022.

12 Article 7 Report (covering 2018), Form A.

13 UNDP, "Emergency Mine Action Project, Annual Progress Report 2019", 20 January 2020, pp. 7 and 14.

14 UNDP Annual Report on Mine Action in Yemen 2020, February 2021, p. 9.

15 Email from Ameen Saleh Al-Aqili, YEMAC, 26 December 2021.

16 2022 Article 5 deadline Extension Request, p. 25.

17 Email from Marie Dahan, UNDP, 1 June 2022.

18 UNDP Annual Report on Mine Action in Yemen 2021, 15 February 2022, p. 18; and email from Marie Dahan, UNDP 1 June 2022.

19 Email from Marie Dahan, UNDP, 1 June 2022.

20 2019 Article 5 deadline Extension Request, pp. 5 and 22; and email from Stephen Robinson, Senior Technical Adviser, UNDP, 21 July 2020.

21 Article 7 Report (covering 2019), Form D.

22 Article 5 deadline Extension Request, March 2022, pp. 26–27.

23 UNDP, "Emergency Mine Action Project, Annual Progress Report 2019", 20 January 2020, p. 12; and email from Ameen Saleh Al-Aqili, YEMAC, 26 December 2021.

24 Emails from Ameen Saleh Al-Aqili, YEMAC, 5 May 2021; and Stephen Robinson, UNDP, 27 May 2020.

education.²⁵ YMACC and its mine action implementing partners held monthly meetings in 2021 and the Mine Action area of responsibility, chaired by UNDP as the mine action coordinator, also met monthly.²⁶ UNDP said YEMAC needed to conclude its review of its organisational structure in order to raise the sector's efficiency and effectiveness.²⁷

Mine action stakeholders say the creation of YMACC has improved coordination with operators although decision-making boundaries between YEMAC and YMACC are not always clear. 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 conducted by six international and nine national staff working from a number of different offices. These included four project area coordinators based in Aden, Hodeida, Mokha, and Mukalla; two administrative staff in Sana'a; and three in Aden.²⁸ 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.²⁹ The DFA revoked the visa of UNDP's Senior Technical Adviser in 2021, but other UNDP staff were able to visit Sana'a in early 2022.³⁰

ENVIRONMENTAL POLICIES AND ACTION

YEMAC's implementing partners said they have had no indication that environmental management and protection feature in its planning and tasking. Revised national mine action standards include a chapter on Environment, Health and Safety Management but they exist only in draft form awaiting approval. DRC and HALO Trust both reported applying their organisations' global policy and standing operating procedures (SOPs), but DRC said its SOP was largely generic and not adapted to local environmental conditions.³¹

GENDER AND DIVERSITY

YEMAC said the inclusion of women in mine action was a priority in 2021 and, in Yemen's Article 5 deadline extension request submitted by the IRG in March 2022, repeated that it was the position of both YEMAC and YMACC.³² It started training female staff for EOD, non-technical survey, and risk education in 2020.³³ The 2022 extension request noted that YEMAC had employed 15 women in non-technical survey as well as another 15 women in risk education in order to ensure the different needs of women and girls as well as men and boys are taken into account. It said other women worked in information management and victim assistance. It stated "there is no objection to including more women".³⁴ However, YMACC was reportedly resistant to employing women in multi-task teams.³⁵

UNDP noted that integrating women into the mine action programme remained "challenging", but it reported that among 17 women who underwent training in 2021, three took

a Level 2 EOD course, three others attended an improvised explosive device disposal (IEDD) good practice course and engage in IED disposal operations with the Directorate of Family Protection, and 10 women were trained in non-technical survey.³⁶

Social and cultural conventions present a significant impediment to efforts to promote inclusion in the sector. Women's traditional role as responsible for family care is seen as discouraging women from applying for jobs. Operators report cases where husbands have forbidden women applicants from attending interviews. 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.³⁷

25 UNDP *Annual Report on Mine Action in Yemen 2020*, p. 14.

26 Email from Nicholas Torbet, HALO Trust, 19 April 2022.

27 UNDP *Annual Report on Mine Action in Yemen 2020*, p. 20.

28 UNDP *Annual Report on Mine Action in Yemen 2020*, p. 84.

29 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.

30 Emails from Ameen Saleh Al-Aqili, YEMAC, 26 December 2021; and Stephen Bryant, UNDP, 7 February 2022.

31 Emails from Marie-Josée Hamel, Regional Programme Advisor – Middle East, DRC, 30 March 2022 and Nicholas Torbet, HALO Trust, 19 April 2022.

32 Email from Ameen Saleh Al-Aqili, YEMAC, 26 December 2021; and Article 5 deadline Extension Request, March 2022, p. 21.

33 Email from Ameen Saleh Al-Aqili, YEMAC, 5 May 2021; and UNDP *Annual Report 2020*, p. 15.

34 Article 5 deadline Extension Request, March 2022, p. 21.

35 Email from Marie-Josée Hamel, DRC, 30 March 2022.

36 UNDP, *Annual Report on Mine Action in Yemen 2021*, p. 15.

37 Email from Esteban Bernal, Programme Manager, Humanitarian, Disarmament and Peace Building, DRC, 23 March 2021.

Employment of women among international operators remained at a low level. DRC said 21% of its national employees were women and none worked in managerial or supervisory positions, but at least one woman was employed in each of its three-person non-technical survey teams.³⁸ Women made up only 14% of HALO Trust's staff overall, but included eight women in four non-technical survey teams.³⁹

INFORMATION MANAGEMENT AND REPORTING

YEMAC, with support from UNDP and the Geneva International Centre for Humanitarian Demining (GICHD), upgraded its headquarters Information Management System for Mine Action (IMSMA) database, installing the Core version which UNDP reported became operational in September 2020.⁴⁰ The system was installed in YMACC in 2021 and will serve as a centralised data centre.⁴¹ YEMAC's northern office works with an older IMSMA system.⁴²

Efforts continued in 2021 to bring the system into line with international standards. YEMAC and its implementing partners developed a range of hard copy and electronic reporting forms, including non-technical survey forms, which underwent extensive modification in the course of the year. Operators said the quality of data and access to it had improved during the year but observed the system involved considerable duplication and could benefit from streamlining.⁴³

UNDP said an information management technical working group (TWG) is considered one of the vital mine action groups in which all implementing partners and stakeholders participate,⁴⁴ but its meetings were suspended in 2021

because of COVID-19 and have not resumed on a regular basis. Implementing partners say the need for inclusive discussion on information management has increased and that the lack of such meetings has hampered timely decision making.⁴⁵

Gaps in reporting remained a significant concern in 2021. YEMAC stated that all mine action data collected by operators are nationally owned and shared. It said Project Masam provides monthly reports detailing the operating sites of its teams, operating results, and locations of mine contamination.⁴⁶ International implementing partners say that some actors are not disclosing operating results, creating uncertainty about what areas have been surveyed or cleared, risking duplication of efforts or the omission of hazardous areas in the national database.⁴⁷ Among key operational challenges facing the sector, UNDP reported "the lack of cooperation between Project Masam and YEMAC (South) in terms of sharing statistically verifiable data on contamination in areas where Project Masam operates."⁴⁸

PLANNING AND TASKING

Mine action in Yemen continues on an emergency basis in a context of continuing conflict that has not lent itself to detailed advance planning, responding instead to immediate threats from all forms of explosive ordnance.⁴⁹ UNDP observed that YEMAC also needed to organise field operations to address longer term impacts of contamination from explosive remnants of war (ERW) as well as emergency responses. UNDP also reported an urgent need for maritime survey and clearance to improve safety for international shipping, lower costs of food, and restore confidence in the local fishing industry.⁵⁰

Yemen submitted an Article 5 deadline extension request in March 2022 including a work plan that identified general areas of activity such as emergency response, survey, and risk education, but the request gave no details. Yemen said it would update its plans every year or two.⁵¹

YEMAC identified its priority for 2021 as conducting baseline survey in line with the Article 5 deadline extension request, expanding risk education, improving coordination with humanitarian agencies in identifying operating priorities, and updating SOPs and national mine action standards (NMAS).⁵² YEMAC priorities in 2021 included planning survey

38 Email from Marie-Josée Hamel, DRC, 30 March 2022.

39 Email from Nicholas Torbet, Head of Region – Middle East (Yemen, Libya), HALO Trust, 19 April 2022.

40 *UNDP Annual Report on Mine Action in Yemen 2020*, p. 13; and email from Esteban Bernal, DRC, 23 March 2021.

41 Interview with Stephen Robinson, UNDP, Geneva, 23 March 2021; and *UNDP Annual Report 2021*, p. 10.

42 Email from GICHD, 30 April 2020.

43 Emails from Marie-Josée Hamel, DRC, 30 March 2022; and Nicholas Torbet, HALO Trust, 19 April 2022.

44 *UNDP Annual Report on Mine Action in Yemen 2021*, p. 11.

45 Email from Nicholas Torbet, HALO Trust, 19 April 2022.

46 Email from Ameen Saleh Al-Aqili, YEMAC, 26 December 2021.

47 Email from Marie-Josée Hamel, DRC, 30 March 2022.

48 *UNDP Annual Report on Mine Action in Yemen 2021*, p. 6.

49 Article 5 deadline Extension Request, March 2022, p. 26.

50 *UNDP Annual Report on Mine Action in Yemen 2021*, p. 20.

51 Article 5 deadline Extension Request, March 2022, p. 27.

52 Email from Ameen Saleh Al-Aqili, YEMAC, 5 May 2021.

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.⁵³

Mine action sector priorities remained largely unchanged in 2022. The 2022 Article 5 deadline extension request keeps the baseline survey as its top priority along with building the capacity and resources of the mine action sector. The request emphasises flexibility and states that the plans it set out are a “living document” that will be subject to continuous review to adapt to changing circumstances.⁵⁴

International operators received the first task orders from YMACC in July 2020, marking a significant step toward planning and coordination.⁵⁵ Lack of clarity on the boundaries between YEMAC and YMACC exposed some initial coordination challenges and UNDP said YEMAC needed to finalise a review of its internal structure in order to increase efficiency.⁵⁶ International operators said the process of issuing task orders had improved in 2021 but still suffered from a lack of prioritisation and coordination which prevented timely planning. YMACC had monthly meetings with implementing partners who reported it consulted them on work plans and issued task dossiers in a timely manner.⁵⁷

Bureaucratic obstacles, particularly with regard to equipment imports and the issuance of visas, remained a major problem for the sector. International operators described it as the biggest impediment holding back implementation of YEMAC plans for survey and clearance. YEMAC denied there was an issue. YEMAC informed Mine Action Review that: “Yemen does not have any obstacles or delays in matters of importing equipment.” It said delays experienced by some operators were due to their own administrative procedures, errors in their applications, or a lack of understanding of the required legal procedures. It also noted that in meetings with MOPIC, national mine action authorities pointed out the importance of importing equipment for survey and clearance.⁵⁸

HALO Trust noted it had tried for two years to import a range of equipment, including Minelab F3 detectors, delaying operations. It eventually received approval in late 2021 but took delivery only in July 2022.⁵⁹ DRC similarly reported a serious blockage to importing equipment, also citing customs complications in transit countries as an additional delaying factor. The transfer of responsibility for issuing visas from MOPIC to the Ministry of Interior in the second half of 2021 saw the time taken to issue visas for international staff typically increase from one month to three months, causing further delays implementing planned activities.⁶⁰

LAND RELEASE SYSTEM

STANDARDS AND LAND RELEASE EFFICIENCY

Yemen is in the process of revising and updating its national mine action standards. The existing NMAS were based on the International Mine Action Standards (IMAS) when they were drawn up in 2007, pre-dating most of Yemen's new 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.⁶¹

YEMAC reported it had revised 32 chapters of NMAS in 2021, including standards relating to land release, and that these were compliant with IMAS and the Oslo Action Plan. The new standards have yet to be approved by the government⁶² and had not come into effect as of May 2022. DRC said its local SOPs, which are based on its global SOPs but adapted for Yemen, were updated and approved in 2021. SOPs for non-technical survey were revised by the non-technical survey

manager and approved by the organisation's head office.⁶³ HALO Trust said it had developed new SOPs for non-technical survey and drafted SOPs for clearance that would be finalised after it had taken delivery of the new detectors.⁶⁴

Project Masam said it paused operations on several occasions in 2021 to review SOPs and conduct refresher training on Tactics, Techniques and Procedures (TTP) to deal with new types of Houthi-laid landmines and improvised mines encountered in operations.⁶⁵

Criteria for prioritising tasks remained unclear. Yemen's Article 5 deadline extension request and latest Article 7 report say it has a prioritisation mechanism and augments it with input from local authorities and humanitarian agencies.⁶⁶ Yemen's revised Article 5 extension request states that YMACC has developed a national prioritisation matrix based

53 Ibid.

54 Article 5 deadline Extension Request, March 2022, p. 29.

55 Emails from DRC, 25 March 2021; and Matthew Smith, Programme Manager, HALO Trust, 17 May 2021.

56 UNDP *Annual Report on Mine Action in Yemen 2021*, p. 20.

57 Emails from Marie-Josée Hamel, DRC, 30 March 2022; and Nicholas Torbet, HALO Trust, 19 April 2022.

58 Email from Ameen Saleh Al-Aqili, YEMAC, 26 December 2021.

59 Emails from Nicholas Torbet, HALO Trust, 19 April and 15 September 2022.

60 Emails from Marie-Josée Hamel, DRC, 30 March 2022; and Nicholas Torbet, HALO Trust, 19 April 2022.

61 UNDP, “Emergency Mine Action Project, Annual Progress Report 2019”, 20 January 2020, p. 17; and 2019 Article 5 deadline Extension Request, p. 16.

62 Email from Ameen Saleh Al-Aqili, YEMAC, 26 December 2021.

63 Email from Marie-Josée Hamel, DRC, 30 March 2022.

64 Email from Nicholas Torbet, HALO Trust, 19 April 2022.

65 Email from Ousama Algosaibi, Project Masam, 29 May 2022.

66 Article 5 deadline Extension Request, March 2022, p. 7; Article 7 Report (covering 2021), Form D.

on open source data covering district size, the number of mine incidents and accidents, estimated total population, and accessibility which is updated every three months but also says there is a temporary prioritisation matrix for issuing task orders.⁶⁷ Implementing partners said it had not been circulated so they were unaware of the criteria. As a result, implementing partners requested task orders from YMACC giving priority to areas they knew or had conducted some non-technical survey and were already present.⁶⁸ UNDP said national mine action authorities would use threat impact

assessments prepared by experts it had contracted to identify priority mine action projects for supporting delivery of humanitarian assistance.⁶⁹

UNDP underscored the need for increased training of YEMAC field staff to equip them to deal efficiently with the increased and increasingly diverse contamination and said it would support such development by recruiting international experts to upgrade YEMAC staff skills.⁷⁰

OPERATORS AND OPERATIONAL TOOLS

YEMAC is nominally the biggest operator employing some 400 personnel in YEMAC North and 550 personnel in YEMAC South but both organisations lacked financing and it was unclear how many survey or clearance teams they deployed. Estimates of capacity are complicated by the presence of ghost deminers and, in the south, by patchy reporting on the part of YEMAC team leaders.⁷¹

At the end of 2020, YEMAC reported that its staff of 491 in the south included 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.⁷² It is unclear if the structure and composition of operational teams changed in 2021. Yemen's Article 5 deadline extension request in March 2022 said the national programme had a total of 66 mine action teams but gave no details of how these assets were distributed around the country or how many were active.⁷³

Project Masam, funded by Saudi Arabia's King Salman Humanitarian Aid and Relief Center, operated in 2021 with 32 multi-task clearance teams and 320 national deminers, the same operating capacity it has deployed since 2018. In addition, it had 264 staff in management, logistics and operations. These included a total of 35 international staff, including four in management and logistics, 13 technical advisors/mentors, four medics, eight security and communications staff and six explosive dog detection handlers.⁷⁴ Project Masam said that it "trains, equips and supervises over 450 Yemeni nationals", including deminers, administration, logistics, and security support staff, supported by technical mentors. It operated with headquarters in Aden and Marid and deployed teams in Aden, Al-Jawf, Aldala'a, Al-Hudaydah, Maa'rib, Shabwa, and Taiz.⁷⁵ Saudi Arabia was reported in July 2021 to have extended its \$33.6 million contract with Project Masam and its implementing partner, SafeLane Global, by another year.⁷⁶

DRC had a total staff of 33 people, including five teams conducting non-technical survey and risk education working mainly from Aden, although it also received a task order for these activities in Lahj governorate. It also had nine people working in three battle area clearance (BAC)/EOD teams but they did not conduct any clearance in 2021 as they awaited permission to import equipment. In the hope imports would receive clearance in 2022, DRC planned to add three multi-task teams to its capacity.⁷⁷

The HALO Trust, with 66 staff, operated two four-person non-technical survey/risk education teams and three five-strong EOD teams trained to Level 1 that were conducting mainly BAC and bulk demolitions. It also deployed three five-person multi-task teams (MTT) for non-technical survey and EORE. MTT team leaders were trained to EOD Level 3 and all teams were due to be trained for mine clearance by the end of 2022. HALO Trust also operated an eight-person mechanical team working with a Bobcat Backhoe and a front loader. HALO opened a new office in Turbah, Taiz governorate, late in 2021 to serve as a base for activities beginning in 2022, including non-technical survey, EOD, and mine clearance. It also saw prospects for expanding operations in Lahj and Al-Dhale governorates. In April 2022, HALO added another 24 operations personnel to its EOD capacity. Non-technical survey teams use Survey123 for data collection and migrate it directly to HALO's Global Operation Information Management System (GO-IMS), which it brought into operation in Yemen in early 2022.⁷⁸

Norwegian People's Aid (NPA) completed registration with MOPIC in November 2021 and established an office in Aden to help YEMAC develop a mine detection dog (MDD) programme in the south. NPA has one MDD technical adviser and two team leaders to provide technical and managerial support. NPA previously had 12 dogs undergoing long-leash training at its Global Training Centre in Bosnia and Herzegovina and

67 2022 Article 5 deadline extension request (revised), August 2022, pp. 11–12.

68 Emails from Marie-Josée Hamel, DRC, 30 March 2022; and Nicholas Torbet, HALO Trust, 19 April 2022.

69 UNDP Annual Report on Mine Action in Yemen 2021, p. 11.

70 UNDP Annual Report on Mine Action in Yemen 2021, p. 20.

71 Interview with mine action stakeholders, Geneva, 23 June 2022.

72 Email from Ameen Saleh Al-Aqili, YEMAC, 5 May 2021.

73 Article 5 deadline Extension Request, March 2022, p. 15.

74 Email from Ousama Algosaibi, Project Masam, 29 May 2022.

75 Project Masam website, "Where we work", at: <https://bit.ly/3L0UoQy>, accessed 27 April 2022.

76 "Saudi Arabia extends mine clearing contract in Yemen", *Arab News*, 21 July 2021.

77 Email from Marie-Josée Hamel, DRC, 30 March 2022.

78 Emails from Nicholas Torbet, HALO Trust, 19 April and 15 September 2022.

brought these to Yemen in October 2021. NPA selected 12 MDD handlers from a group put forward by YEMAC and ran a training course on support for technical survey. The handlers and dogs deployed at the start of March 2022 and by early April had released 6,860m² of battle area.⁷⁹

DEMINER SAFETY

Yemen's mine action programme has experienced heavy casualties among deminers in the past four years, particularly in Project Masam, which suffered 37 casualties between May 2018 and April 2020.⁸⁰ In 2021, Project Masam reported two fatalities, one in a demining incident, the other attributed to a security incident resulting from operating in a war zone. Three other personnel were injured in demining incidents. Project Masam said all incidents were investigated internally and by YEMAC.⁸¹ DRC and HALO Trust reported they did not sustain any casualties in 2021.⁸²

LAND RELEASE OUTPUTS AND ARTICLE 5 COMPLIANCE

Yemen's mine action programme has focused on emergency clearance of explosive ordnance threats of all types rather than systematic area clearance or release of mined land, reflecting the challenges posed by years of war, constantly shifting frontlines, re-mining of cleared land, and scattered use of improvised devices by criminal groups.

Productivity rose in 2021 but continues to be hampered by cumbersome and opaque regulation governing imports of equipment and slowing issuance of visas to international staff. HALO Trust waited for two years to receive approval for bringing in mine detectors, eventually taking delivery in July 2022.⁸³ The government transferred responsibility for visas from MOPIC to the Ministry of Interior in October 2021 resulting in longer delays that continued into 2022, hampering plans for training and mentoring national staff. Movements between the South and the North also require permits which can take months to issue and applications often are denied or receive no response.⁸⁴

LAND RELEASE OUTPUTS IN 2021

YEMAC reportedly cleared 4.49km² of battle area in 2021, according to UNDP data, a hefty 43% more than the previous year (see Table 2). It also appears to have sharply increased the number of explosive ordnance items destroyed, reporting 1,676 anti-personnel mines destroyed in 2021 compared with 923 the previous year and 1,032 improvised devices compared with 512 in 2020.⁸⁵ Yemen's Article 7 report for 2021 reported destruction also of 2,439 "IEDs" and 35,886 anti-vehicle mines along with 83,138 items of unexploded ordnance UXO.⁸⁶ These results do not take account of Project Masam operating results and therefore appear to understate the total area cleared and items destroyed.

Table 2: YEMAC clearance of mines and ERW (reported by UNDP)⁸⁷

Year	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
2021	4,489,389	1,676	1,032	5,034	1,777	61,397

79 Email from Faiz Mohammad Paktian, Programme Manager, NPA, 8 April 2022.

80 Project Masam reported 37 casualties between May 2018 and April 2020: 21 killed and 16 injured.

81 Email from Ousama Algosaibi, Project Masam, 29 May 2022.

82 Emails from Marie-Josée Hamel, DRC, 30 March 2022; and Nicholas Torbet, HALO Trust, 19 April 2022.

83 Email from Nicholas Torbet, HALO Trust, 19 April 2022.

84 Email from Marie-Josée Hamel, DRC, 30 March 2022.

85 UNDP Annual Report 2021, Mine Action Programme Dashboard, received by email 29 August 2022.

86 Article 7 Report (covering 2021), Form D.

87 UNDP Annual Report 2021, Mine Action Programme Dashboard, received by email 29 August 2022.

SURVEY IN 2021

YEMAC launched the Yemen baseline survey (YBLS) in April 2021 but said non-technical survey operations started in June and reported survey was conducted on 171 hazardous areas in 2021, mostly in three governorates.⁸⁸ By April 2022, UNDP reported it had identified 83.3km² in six governorates affected by explosive ordnance, including anti-personnel mines. YEMAC reportedly deployed 15 teams for the YBLS in 2021 (increasing to 16 in 2022), supported by DRC (eight teams) and from October 2021 by HALO Trust (two teams increasing to four in 2022).⁸⁹

Table 3: YBLS results April 2021–April 2022⁹⁰

Operator	Location	Area surveyed (m ²)	CHA (m ²)	SHA (m ²)
YEMAC	Abyan, Aden, al-Dhale, Lahj	29,421,704	24,348,597	5,073,107
DRC	Lahj, Hodeida, Taiz	52,493,213	43,722,032	8,771,181
HALO Trust	Lahj, Taiz	1,365,088	1,045,419	319,669
Totals		83,280,005	69,116,048	14,163,957

CLEARANCE IN 2021

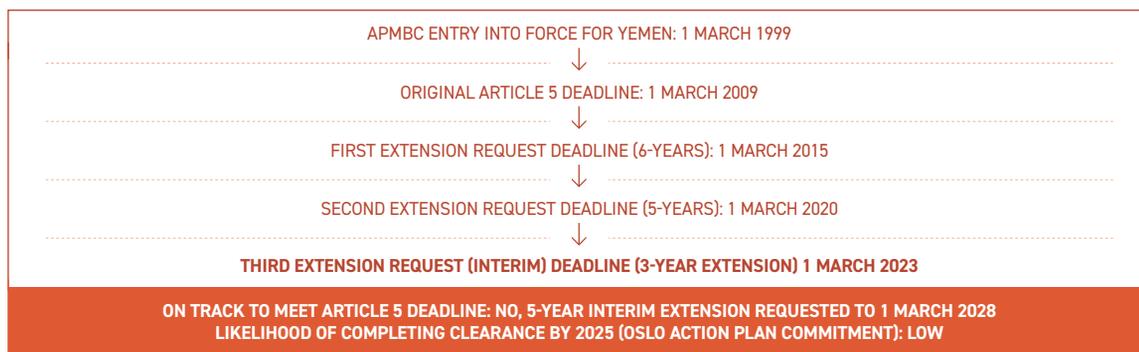
Project Masam reported clearing 10.8km² in 2021 and destroying 1,704 conventional anti-personnel mines, and 46,076 improvised anti-personnel mines together with 48,173 anti-vehicle mines. Project Masam said it was not practical to conduct IMAS-compliant procedures for cancelling land through non-technical survey in its area of operations because of constantly shifting lines of conflict and Houthi tactics of remaining areas previously cleared. As a result, it almost always conducts full clearance.⁹¹

Yemen reported in its 2022 Article 5 deadline extension request that between 2018 and 2021, Project Masam cleared

a total of 28.75km² finding 4,267 anti-personnel mines, 6,228 IEDs, 101,159 anti-vehicle mines, and 186,758 items of UXO.⁹² However, the UN has reported that Project Masam does not share statistically verifiable data,⁹³ its results are not recorded in YMACC's IMSMA database, and they do not appear in Yemen's APMBC Article 7 reports.

As data are inconsistent between sources, and anti-personnel mine clearance is not disaggregated from clearance of anti-vehicle mines and battle area clearance, for the purposes of global reporting, Mine Action Review has estimated the amount of mined area cleared in Yemen in 2021 at 1.5km².

ARTICLE 5 DEADLINE AND COMPLIANCE



Under Article 5 of the APMBC (and in accordance with the third extension, for three years, granted by States Parties 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.

88 Article 7 Report (covering 2021), Form D. YEMAC reported survey of 33 HAs in Abyan, 37 in Aden, 43 in Lahj, 21 in each of Hodeida and Taiz, and 16 in al-Dhale.

89 Email from Marie Dahan, UNDP, 1 June 2022.

90 Ibid.

91 Email from Ousama Algosaibi, Project Masam, 29 May 2022.

92 2022 Article 5 deadline Extension Request, p. 18.

93 UNDP Annual Report on Mine Action in Yemen 2021, p. 6.

Yemen presented its third extension request in 2019 as an interim request. In 2020, after five years of war, Yemen had no idea of the extent of its mine contamination. It asked for three years to give it time to conduct a baseline survey which would provide the basis for another extension request supported by up-to-date contamination data allowing an informed assessment of the time needed for progress on its Article 5 obligations. In 2020, however, Yemen lacked the institutional framework, capacity and resources to launch the YBLS which only started in April 2021, almost half way through the extension period, and in March 2022 it requested another deadline extension.

The new request is also in effect an interim request. It states as a "startling" fact that it is asking for five years to do what it had set out to do in the previous extension period, namely to establish a baseline estimate of mine contamination.⁹⁴ Additionally, it proposes to use the time to "reorient" the mine action sector and build capacity to meet explosive hazard challenges it was not previously equipped to tackle, including heavy contamination by improvised mines and IEDs. In addition to land-based contamination, UNDP has also flagged the threat posed to international shipping and the local fishing industry, both key sources of food to a population experiencing acute hunger. The plan does not set out clear targets or priorities for non-technical survey.⁹⁵

Plan implementation faces a number of severe limitations. The seven-year war between Ansar Allah and the Saudi-backed IRG has added significant explosive hazard threats and fractured government authority, obstructing the development of a national response. The programme of activity outlined in Yemen's extension request is confined to areas under the control of the IRG. In the north, mine action is reportedly limited mainly to spot tasks and a little survey and constrained by limited resources and access for international staff is limited.⁹⁶ In the south, the war

is only the most visible of multiple and complex security challenges, including al-Qaeda in the Arabian Peninsula and criminal enterprise, which have limited physical access to hazardous areas. Meanwhile, mine action teams have faced severe capacity constraints ranging from shortages of fuel to lack of expertise and equipment, aggravated by complex bureaucratic procedures holding up imports of critical equipment such as mine detectors, and delays in issuing visas to international staff required for training and mentoring programmes.

Funding may also prove a constraint on Yemen's mine action programme. The extension request estimates that Yemen needs \$48 million over the five years of the extension period but provides no clarity on what is the basis for this assessment.⁹⁷ Most of the funding for mine action since 2018 has come from Saudi funding for Project Masam, estimated at between \$30 million and \$40 million a year since 2018.⁹⁸ UNDP received approximately \$14 million from other international donors in 2021 but was budgeting for donor support of \$8 million in 2022.⁹⁹

Table 3: Five-year summary of anti-personnel mine clearance

Year	Area cleared (km ²)
2021	*1.5
2020	*1.0
2019	*1.0
2018	*0.1
2017	*1.0
Total	*4.6

* Mine Action Review estimates

PLANNING FOR MANAGEMENT OF RESIDUAL CONTAMINATION

Yemen does not have plans in place to address residual contamination once its Article 5 obligations have been fulfilled.

⁹⁴ 2022 Article 5 deadline Extension Request, p. 3.

⁹⁵ UNDP Annual Report on Mine Action in Yemen 2021, p. 6.

⁹⁶ Interview with Stephen Bryant, UNDP, Geneva, 23 June 2022.

⁹⁷ 2022 Article 5 deadline Extension Request, p. 5.

⁹⁸ Yemen's Article 5 deadline extension request recorded Saudi funding of \$120 million for Project Masam between 2018 and 2020.

⁹⁹ Interview with Stephen Bryant, UNDP, Geneva, 23 June 2022.