

# SOUTH SUDAN

MINE  
ACTION  
REVIEW

CLEARING CLUSTER  
MUNITION REMNANTS  
2023

ON 4 AUGUST 2023, SOUTH SUDAN ACCEDED TO THE CONVENTION ON CLUSTER MUNITIONS, WHICH WILL ENTER INTO FORCE ON 1 FEBRUARY 2024  
SOUTH SUDAN'S ARTICLE 4 DEADLINE WILL BE 1 FEBRUARY 2034

## KEY DATA

### CLUSTER MUNITION CONTAMINATION: MEDIUM

NATIONAL ESTIMATE

**5.28km<sup>2</sup>**

A REVIEW OF CMR CONTAMINATION IS EXPECTED TO RESULT IN AN INCREASE IN CONTAMINATED AREA.

SUBMUNITION  
CLEARANCE IN 2022

**4.3km<sup>2</sup>**

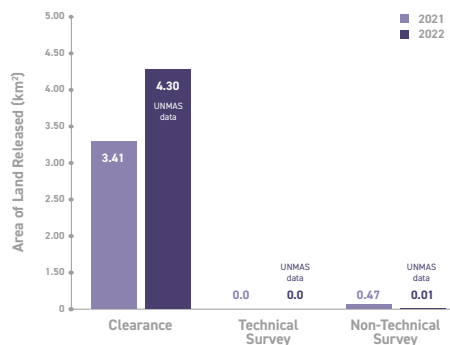
UNMAS DATA

SUBMUNITIONS  
DESTROYED IN 2022

**3,320**

(INCLUDING 90 DESTROYED  
DURING SPOT TASKS)

## LAND RELEASE OUTPUT



## KEY DEVELOPMENTS

In 2022, clearance of cluster munition remnants (CMR) and other unexploded ordnance (UXO) continued to be prioritised over mine clearance due to the higher number of victims. Despite a background of ongoing insecurity, CMR-contaminated area released in 2022 increased slightly to 4.3km<sup>2</sup> up from 3.9km<sup>2</sup> in 2021. It is, however, increasingly unlikely that South Sudan will meet its self-imposed deadline for clearing all CMR of July 2026. Having acceded to the Convention on Cluster Munitions (CCM) on 4 August 2023, the Treaty will enter into force for South Sudan on 1 February 2024 and its Article 4 clearance deadline will 1 February 2034. South Sudan should be able to fulfil its Article 4 obligations within the initial 10-year CCM deadline.

## RECOMMENDATIONS FOR ACTION

- South Sudan should increase its financial support for mine action operations as well as to the National Mine Action Authority (NMAA).
- South Sudan should strengthen the coordination of mine action and develop a resource mobilisation strategy.
- South Sudan should ensure that the voluntary Article 7 reports it submits contain accurate data consistent with the International Mine Action Standards (IMAS), disaggregated by suspected hazardous area (SHA) and confirmed hazardous area (CHA).

## CLUSTER MUNITION SURVEY AND CLEARANCE CAPACITY

### MANAGEMENT

- National Mine Action Authority (NMAA)

### NATIONAL OPERATORS

- None

### INTERNATIONAL OPERATORS

- Danish Church Aid (DCA) Danish Refugee Council – Mine Action (DRC)

- G4S Ordnance Management (G4S)

- Mines Advisory Group (MAG)

- The Development Initiative (TDI)

- SafeLane Global (SLG)

### OTHER ACTORS

- UN Mine Action Service (UNMAS)

- Geneva International Centre for Humanitarian Demining (GICHD)

## UNDERSTANDING OF CMR CONTAMINATION

At the end of 2022, South Sudan had 127 CMR-contaminated areas covering an area estimated at just under 5.3km<sup>2</sup>: almost 4.6km<sup>2</sup> of CHA and more than 0.7km<sup>2</sup> of SHA.<sup>1</sup> Seven of South Sudan's ten states have areas suspected to contain CMR (see Table 1), with Central and Eastern Equatoria, in the south of the country, by far the most heavily contaminated. Contamination has decreased from an estimated 6.1km<sup>2</sup> across 130 hazardous areas the previous year.<sup>2</sup> Just over 4.3km<sup>2</sup> of CMR-contaminated area was released in 2022, which suggests a far greater decrease in hazardous area. However, the United Nations Mine Action Service (UNMAS) accounts for this indicating that contaminated area and clearance often increase during clearance as operators accurately define the CMR footprint and use a 50-metre fade-out.<sup>3</sup>

Table 1: Cluster munition-contaminated area by state (at end 2022)<sup>4</sup>

State	CHAs	Area (m <sup>2</sup> )	SHAs	Area (m <sup>2</sup> )	Total CHAs/SHAs	Total area (m <sup>2</sup> )
Central Equatoria	48	2,084,017	2	475,503	50	2,559,520
Eastern Equatoria	52	2,203,136	2	50,194	54	2,253,330
Jonglei	6	95,676	2	0	8	95,676
Lakes	1	85,358	0	0	1	85,358
Upper Nile	3	52,702	0	0	3	52,702
Warrap	1	19,745	0	0	1	19,745
Western Equatoria	9	36,480	1	175,698	10	212,178
<b>Totals</b>	<b>120</b>	<b>4,577,114</b>	<b>7</b>	<b>701,395</b>	<b>127</b>	<b>5,278,509</b>

A countrywide baseline survey was never conducted in South Sudan due to insecurity and poor access.<sup>5</sup> In 2017, UNMAS initiated a review of the national Information Management System for Mine Action (IMSMA) database followed by targeted re-survey to determine more accurately the size of SHAs. Re-survey of SHAs is now part of the process whenever clearance teams are tasked to clear cluster munition-contaminated area.<sup>6</sup> In 2023, UNMAS began a small pilot baseline survey in Unity state.<sup>7</sup>

In recent years, South Sudan's national mine action programme has greatly improved the accuracy of estimates of contamination. The total estimate of remaining mine, CMR,

and other explosive remnants of war (ERW) contamination decreased from nearly 89km<sup>2</sup> at the end of 2017 to just over 18km<sup>2</sup> at the end of 2021.<sup>8</sup> However, despite continued land release, CMR contamination increased over the same period, before reducing in 2022. The review of existing database records and re-survey indicated that the increase in contamination in the four years to 2021 was because some task records had been wrongly recorded and were re-classified as CMR-contaminated areas; several overly conservative estimates of existing CHAs in the database were increased to reflect the actual extent of contamination more accurately; and previously unrecorded areas containing CMR were added to the database.<sup>9</sup>

1 Email from Matt Williams, Senior Programme Officer, United Nations Mine Action Service (UNMAS) South Sudan, 23 March 2023.

2 Email from Fran O'Grady, Chief of Mine Action, United Nations Mission in South Sudan (UNMISS), 9 March 2022.

3 Email from Matt Williams, UNMAS South Sudan, 3 May 2023.

4 Ibid., 23 March 2023.

5 Ibid.

6 Email from Fran O'Grady, UNMISS, 9 March 2022.

7 Remarks by Goran Tomasevic, Deputy Chief of Operations, at a meeting with UNMAS, Juba, 30 May 2023.

8 Email from Ayaka Amano, Associate Programme Officer, UNMAS, 2 May 2019; and UNMAS, South Sudan IMSMA Monthly Report, March 2004 to December 2021, at: <https://bit.ly/34nv9VK>.

9 Email from Ayaka Amano, UNMAS, 2 May 2019.

While 127 hazardous areas across South Sudan were reported at the end of 2022, historically the size of cluster munition strike sites has been underestimated, as indicated above, with analysis of previous clearance suggesting that the average task size is around 70,000m<sup>2</sup> (often reflecting multiple, overlapping strikes). It is likely therefore that the current assessment of CMR contamination still underestimates the scale of the problem.<sup>10</sup> In addition, as refugees start to return, it is expected that they will encounter previously unrecorded submunitions as the areas with the highest levels of contamination, especially in Central and Eastern Equatoria, are sparsely populated.<sup>11</sup> Moreover, information about contamination in hazardous areas in remote or sparsely populated areas is difficult to verify through non-technical survey (NTS).<sup>12</sup> According to UNMAS, the number of CMR contaminated areas is reasonably accurate. Although additional hazardous areas are likely to be identified in remote areas, these are not expected to increase dramatically the overall number of CHAs. However, given that contaminated area has generally increased during clearance operations, in April 2023 UNMAS began a review

of the size of CHAs to improve the accuracy of recorded CMR-contaminated area.<sup>13</sup>

Cluster munitions were used during the decade-long war between Sudan and the Sudan People's Liberation Army / Movement (SPLA/M) that ended in 2005. From 1995 to 2000, prior to South Sudan's independence, Sudanese government forces are believed to have dropped many cluster bombs over southern Sudan. In early 2014, remnants of Soviet-era RBK 250-275 A0-1SCh cluster bombs, including intact unexploded submunitions, were found near a major road in Jonglei State, 16km south of the State capital, Bor.<sup>14</sup> The area was not previously known to be CMR-contaminated and it is not known who was responsible for their use. Uganda denied using cluster bombs near Bor in early 2014, when it was providing air support to the government of South Sudan against opposition forces. The South Sudanese government also denied that its forces or the Ugandan military used cluster munitions during the conflict. It described the use as an "unfortunate incident" and pledged not to use cluster munitions.<sup>15</sup>

## OTHER EXPLOSIVE REMNANTS OF WAR AND LANDMINES

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South Sudan has a significant problem with mines and especially ERW, resulting from large-scale use of explosive weapons during armed conflicts in 1955–72 and 1983–2005 (see Mine Action Review's *Clearing the Mines 2023* report on South Sudan for further information on landmines).

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## NATIONAL OWNERSHIP AND PROGRAMME MANAGEMENT

The South Sudan Demining Authority (SSDA)—since renamed the South Sudan National Mine Action Authority (NMAA)—was established by presidential decree in 2006 to function as the national agency for planning, coordination, and monitoring of mine action in South Sudan.<sup>16</sup> There is no national mine action legislation in place,<sup>17</sup> although this was expected to be adopted in 2023.<sup>18</sup>

In May 2023, the parliament of South Sudan took the decision to accede to the Convention on Cluster Munitions (CCM)<sup>19</sup> in line with a decision by the Council of Ministers in September 2017. On 4 August 2023, South Sudan deposited its instrument of accession with the UN Secretary-General in New York. The CCM enters into force for South Sudan on 1 February 2024 and its Article 4 clearance deadline will be 1 February 2034.

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10 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

11 Email from Brendan Ramshaw, Operations Manager, DanChurchAid (DCA), 22 April 2021.

12 Email from Lisa Müller-Dormann, then Programme Officer/Co-coordinator Mine Action Sub-cluster, Mines Advisory Group (MAG), 22 March 2022.

13 Emails from Matt Williams, UNMAS South Sudan, 23 March 2023, and 3 May 2023.

14 Landmine and Cluster Munition Monitor, "South Sudan", accessed 11 April 2023, at <https://bit.ly/3Kqz5cU>.

15 Ibid.

16 "South Sudan De-Mining Authority", undated, at: <http://bit.ly/2Y5Eb4o>.

17 Email from Ayaka Amano, UNMAS, 2 May 2019.

18 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

19 UNMAS Facebook post, 12 May 2023, at <https://bit.ly/3C1CgEj>.

In 2011, UN Security Council Resolution 1996 tasked UNMAS with supporting South Sudan in demining and strengthening the capacity of the NMAA and UNMAS derives its current responsibilities from the United Nations Mission in South Sudan (UNMISS) mandate.<sup>20</sup> Working together, UNMAS and the NMAA oversee mine action across the country. The NMAA and UNMAS both have offices in Juba, UNMAS has sub-offices in Bentiu, Bor, Malakal, and Wau, while the NMAA also has offices in Wau and Yei.<sup>21</sup> UNMAS and the NMAA accredit, task, monitor, and evaluate mine action organisations; conduct route verification and clearance; provide escorts for convoys on high-threat routes to enable the delivery of humanitarian assistance; and collect data and map hazardous areas.<sup>22</sup>

The NMAA continues to expand its responsibilities gradually. However, it still faces serious financial and technical limitations preventing it from managing mine action operations effectively and UNMAS and international non-governmental organisations (NGOs) continue to support the authority.<sup>23</sup> The NMAA is, though, reported to play a significant role in facilitating mine action operations.<sup>24</sup> Meetings of monthly coordination meetings co-chaired by the NMAA and UNMAS with all operators (commercial and international NGOs), which have been largely dormant in recent years, resumed in 2023.<sup>25</sup> But there is no platform for regular in-country dialogue involving both national and international partners on progress, challenges, and support for mine action.

There is generally an enabling environment for mine action operations in South Sudan and the authorities support the necessary administrative processes for granting visas to international staff and importing equipment, and approve memoranda of understanding.<sup>26</sup> The Ministry of Labour sometimes reject work permit applications for international mine action staff if they deem there to be national workers with the required skills.<sup>27</sup> Delays are often encountered when importing demining equipment as multiple approvals are required from different government offices. If equipment is no longer needed after the end of a programme, it is usually handed over to the government or an identified partner in South Sudan; equipment cannot be re-exported.<sup>28</sup>

In 2022, UNMAS provided training to NMAA staff in operational management, quality management (QM), and monitoring and evaluation.<sup>29</sup> A pilot project between August

2021 and March 2022 resulted in the development of an explosive ordnance disposal (EOD) mobile team within the national authority that was trained and accredited to conduct surveys, EOD spot tasks, and explosive ordnance risk education (EORE). They received a total of 10 EOD spot task requests during the programme and disposed of 17 items of UXO and 1 unexploded submunition.<sup>30</sup>

Mines Advisory Group (MAG) provided capacity building support to the NMAA through its secondment programme whereby NMAA staff are seconded to MAG teams as deminers for an average of three years. The programme aims to equip staff with the skills necessary to lead potential future technical teams within the NMAA. Secondees develop on-the-job experience as deminers, attend technical training courses such as EOD Level 2, and develop leadership and management skills. In 2022, one secondee was promoted to the role of Site Supervisor, the first NMAA staff member to reach this leadership level;<sup>31</sup> others have become team leaders.<sup>32</sup> In March 2023, three NMAA staff were on secondment with MAG.<sup>33</sup> In addition, following an institutional capacity assessment of the NMAA by MAG in 2021, MAG recruited a capacity development advisor to work with the NMAA to strengthen its human resources, procurement, financial management, and logistics processes for nine months from September 2022.<sup>34</sup>

DanChurchAid (DCA) has employed an NMAA staff member who worked as a National Site Supervisor from October 2019, is training to become a Technical Advisor, and has periodically acted as Technical Advisor for several months at a time.<sup>35</sup> In addition, DCA is providing capacity building on EORE to a national NGO, Support for Peace and Education Development Programme (SPEDP).<sup>36</sup> Danish Refugee Council (DRC) is training the national NGO, Community In Need Aid (CINA), on clearance and EORE procedures and nine CINA staff are seconded to DRC teams.<sup>37</sup> DRC and DCA highlight the peacebuilding and development slant they bring to mine action.<sup>38</sup> The Geneva International Centre for Humanitarian Demining (GICHD), in partnership with UNDP, has undertaken a study on the sustainable development outcomes of mine action in South Sudan which will be published in 2023.<sup>39</sup> The study highlights the value of mine action in South Sudan as an enabler of broader humanitarian, peace, and development efforts.<sup>40</sup> In 2022, UNMAS and DRC were the co-coordinators

20 Remarks by Fran O'Grady, Chief of Mine Action, at a meeting with UNMAS, Juba, 30 May 2023.

21 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

22 UNMAS, "Mine Action Portfolio 2019".

23 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

24 Remarks by Fran O'Grady, Chief of Mine Action, at a meeting with UNMAS, Juba, 30 May 2023.

25 Remarks by Jurkuch Barach, Chairperson, NMAA, Monthly NMAA Mine Action Coordination Meeting, Juba, 30 May 2023.

26 Email from Lisa Müller-Dormann, Humanitarian Disarmament and Peacebuilding Programme Manager, Danish Refugee Council (DRC), 27 March 2023.

27 Email from Eric Okoth, Country Director, MAG, 20 March 2023.

28 Ibid.

29 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

30 Ibid.

31 Ibid.

32 Email from Eric Okoth, MAG, 20 March 2023.

33 Ibid.

34 Emails from Eric Okoth, MAG, 12 and 20 June 2023.

35 Email from Hajrudin Osmanovic, Interim Operations Manager, DCA, 13 June 2023.

36 Ibid., 18 April 2023.

37 Email from Lisa Müller-Dormann, DRC, 27 March 2023.

38 Interview with Lisa Müller-Dormann, DRC, 21 May 2023; and email from Hajrudin Osmanovic, DCA, 13 June 2023.

39 Email from Sasha Logie, Country Focal Point, GICHD, 28 March 2023.

40 Ibid., 12 June 2023.

of the Mine Action Sub-Cluster,<sup>41</sup> although there has been a lack of engagement with the sub-cluster in recent years and it has not been very active.<sup>42</sup>

The Government of South Sudan has reported funding NMAA staff salaries and its sub-offices in Wau and Yei, although as at March 2023, the Yei office was still not operational, having closed in 2021 for security reasons.<sup>43</sup> The government's total support to the NMAA was reported as below US\$100,000 in 2022, and there was no national funding for CMR survey or clearance.<sup>44</sup>

In South Sudan's revised 2020 Anti-Personnel Mine Ban Convention (APMBC) Article 5 deadline extension request, completing all clearance by July 2026 was estimated to require US\$148 million.<sup>45</sup> In 2021, funding for mine action from external sources, including through UNMAS, was in the region of US\$35.5 million,<sup>46</sup> while in 2022 it was about US\$42 million.<sup>47</sup> In 2022, UNMISS provided about US\$29 million for mine action in South Sudan (about 70% of mine action funding in 2022), all of which was managed by UNMAS.<sup>48</sup> UNMAS contracted 24 commercial demining teams in 2022 to undertake a range of clearance, survey, disposal work, and risk education activities for a range explosive ordnance. The

operational contracts were worth almost \$22.5 million.<sup>49</sup>

The international NGOs do not currently have any of the UNMAS operational contracts. They indicated that the requirements of UNMAS contracts make it difficult for them to tender,<sup>50</sup> and they largely rely on bilateral donor support. In recent years, the South Sudan Humanitarian Fund run by the UN Office for the Coordination of Humanitarian Affairs (OCHA) has not allocated any funding to mine action survey or clearance operations.<sup>51</sup> By May 2023, both DCA and DRC were facing funding shortfalls.<sup>52</sup>

The NMAA has requested international funding and technical support covering 2022 to 2024 for CMR clearance and for training on residual capacity.<sup>53</sup> South Sudan does not have a mine action resource mobilisation strategy. The GICHD will support the NMAA in developing a new Mine Action Strategy to replace the 2018–22 strategy,<sup>54</sup> and this should include a resource mobilisation strategy.<sup>55</sup> The UNMAS Chief of Mine Action did, however, conduct a range of advocacy activities in support of funding for international and national NGOs in 2022. These included presenting to key Juba-based donors and to UN Member State representatives at UN headquarters in New York, as well as advocating to UNMISS leadership.<sup>56</sup>

## ENVIRONMENTAL POLICIES AND ACTION

UNMAS has incorporated environmental considerations into mine action operations, in collaboration with the NMAA, providing guidance in the National Technical Standard and Guidelines (NTSGs).<sup>57</sup> South Sudan has an NTSG on Health and Safety, Social and Environment (HSSE), which was introduced in 2018, in line with IMAS 07.13 on Environmental Management in Mine Action.<sup>58</sup> This is updated annually to incorporate lessons learned and in 2022, amendments were made to the NTSG on conducting environmentally compliant disposal and the subsequent treatment of the "Free From Explosives" metal scrap.<sup>59</sup>

Implementing partners in South Sudan establish their own standard operating procedures (SOPs) and policies based on the NTSG to safeguard the environment. When survey and clearance are completed, an area should be restored in accordance with the wishes of the local community. At a minimum, restoration should include the removal of large

items of scrap metal, the filling in of any pits or craters due to EOD, and the fencing off of any areas where there may be residual non-explosives hazardous materials left in the ground.<sup>60</sup> To minimise the impact of mine action activities on the environment, UNMAS continued to sensitise mine action operators in South Sudan on environmental considerations in planning demolitions and in post-demolition procedures, in mechanical operations, and in conducting vegetation clearance.<sup>61</sup>

On MAG's worksites and temporary accommodation facilities, the NTSGs are reported to be strictly followed with robust sanitary and waste management systems and environmental considerations integrated into daily operations and programming. MAG employs a comprehensive post-demolition site remediation in which teams leave the ground as close to its original state as possible. Mechanical assets and road transport are only used when necessary.

41 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

42 Interview with Lisa Müller-Dormann, DRC, 21 May 2023; and remarks by Matt Williams, Senior Programme Officer, at a meeting with UNMAS, Juba, 30 May 2023.

43 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

44 Ibid.

45 Revised 2020 APMBC Article 5 deadline extension request, p. 75.

46 Emails from Fran O'Grady, UNMISS, 9 March 2022; and Matt Williams, UNMAS South Sudan, 19 June 2023.

47 Updated Work Plan for the period from January 2022 to June 2026, submitted to the APMBC Article 5 Committee, dated 31 April 2022, p. 34.

48 Zoom interview with Fran O'Grady, UNMISS, 7 March 2023; and emails from Matt Williams, UNMAS South Sudan, 3 May and 19 June 2023.

49 Email from Matt Williams, UNMAS South Sudan, 3 May 2023.

50 Interviews with Andrew Steele, Logistics Manager, MAG, 20 May 2023; Lisa Müller-Dormann, DRC, 21 May 2023; and Janardhan Rao, Country Director, DCA, 26 May 2023.

51 Remarks by Matt Williams, Senior Programme Officer, at a meeting with UNMAS, Juba, 30 May 2023.

52 Interviews with Lisa Müller-Dormann, DRC, 21 May 2023; and Janardhan Rao, DCA, 26 May 2023.

53 Voluntary Article 7 Report (covering 2020), Form I.

54 Remarks by Fran O'Grady, Chief of Mine Action, at a meeting with UNMAS, Juba, 30 May 2023.

55 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

56 Ibid.

57 Ibid.

58 Voluntary Article 7 Report (covering 2020), Form I.

59 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

60 Article 7 Report (covering 2021), Form B.

61 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

MAG's community liaison teams maintain contact with community leaders to inform them of operations and provide an opportunity for feedback, including about possible environmental damage.<sup>62</sup> DRC's SOP limits the felling of trees above a certain height and supports the restoration of soil following demolitions, while its bases in Magwi use

solar power.<sup>63</sup> In 2023, DCA initiated an organisation-wide environmental assessment in South Sudan,<sup>64</sup> which includes an assessment of the environmental impact of clearance, and the development of a self-assessment tool to minimise environmental degradation.<sup>65</sup>

## GENDER AND DIVERSITY

South Sudan's second national mine action strategy for 2018–22 includes a section on gender, focusing on how different gender and age groups are affected by mines and ERW and have specific and varying needs and priorities. Guidelines on mainstreaming gender considerations in mine action planning and operations in South Sudan are also incorporated in the strategy, including on the collection of data disaggregated by sex and age.<sup>66</sup> UNMAS reported that the programme was also implementing the UN Gender Guidelines for Mine Action, monitored by a gender focal point, who also encourages implementing partners to provide equal employment opportunities and consider the role and the behaviour of male and female beneficiaries when planning, implementing, and managing projects.<sup>67</sup> UNMAS has said that, in theory, employment opportunities for qualified men and women in survey and clearance teams across the organisations operating in South Sudan are equal. However, redressing the gender balance is a long-term challenge and a work in progress.<sup>68</sup>

South Sudan's NTSGs contain provisions requiring all community liaison teams to tailor activities on the basis of the gendered needs of beneficiaries, and to address the specific risks faced by women and girls.<sup>69</sup> All teams are reportedly gender balanced and trained to be inclusive, for example by ensuring outreach through NTS and risk education is done separately for different age and gender groups, and taking local cultural practices into consideration.<sup>70</sup> Ethnic identity is taken into account within survey and clearance teams to ensure safe access and acceptance by local communities.<sup>71</sup> But UNMAS has indicated that ethnic identity continues to

limit the participation of different ethnic minority groups in survey and clearance operations across the country.<sup>72</sup> Community liaison staff capture the needs of different groups including vulnerable and minority groups such as internally displaced persons (IDPs) and refugees, which feeds into operational priorities.<sup>73</sup> UNMAS has reported, though, that task prioritisation is predominantly dependent on security and that resources are concentrated on tasks within limited geographical areas.<sup>74</sup>

All UNMAS operational teams are mixed gender.<sup>75</sup> Workshops for the NMAA and mine action partners on gender equality, gender-based violence (GBV), and gender mainstreaming programming in mine action, delayed by COVID-19, are yet to take place.<sup>76</sup>

Among UNMAS contracted commercial partners, through an increased focus on gender and diversity in procurement processes, female participation in technical and managerial functions is increasing,<sup>77</sup> though the overall proportion of female staff remains low. SafeLane Global (SLG), maintains an overall staffing ratio of 24% women in various positions, including operational staff, The Development Initiative (TDI) maintains 17%, while G4S has 13% female representation including in operational and managerial positions.<sup>78</sup> There is a female Programme Manager for one G4S contract, the first time that a woman has held such a senior position within an UNMAS-contracted operator in South Sudan.<sup>79</sup>

62 Email from Eric Okoth, MAG, 20 March 2023.

63 Email from Lisa Müller-Dormann, DRC, 27 March 2023.

64 Interview with Janardhan Rao, DCA, 26 May 2023.

65 Email from Hajrudin Osmanovic, DCA, 13 June 2023.

66 Emails from Tim Lardner, Chief Mine Action, UNMAS, 27 February and 1 March 2018.

67 Emails from Ayaka Amano, UNMAS, 2 May 2019; and Fran O'Grady, UNMISS, 9 March 2022.

68 Email from Ayaka Amano, UNMAS, 2 May 2019.

69 Ibid.

70 Ibid.

71 Email from Richard Boulter, UNMAS, 8 July 2020.

72 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

73 Ibid.

74 Emails from Ayaka Amano, UNMAS, 2 May 2019; and Matt Williams, UNMAS South Sudan, 23 March 2023.

75 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

76 Ibid., 3 May 2023.

77 Ibid.

78 Ibid.

79 Ibid.

**Table 2: Gender composition of operators (at March 2023)<sup>80</sup>**

Organisation	Total staff	Women employed	Total staff in managerial or supervisory positions	Women in managerial or supervisory positions	Total staff in operational positions	Women in operational positions
UNMAS	46	13	3	1	16	3
G4S*	548	75	110	13	413	62
SLG*	174	41	15	1	155	37
TDI*	69	11	16	2	42	9
MAG	141	48	35	5	109	41
DRC	47	16	7	1	45	16
DCA	42	8	6	0	6	0
<b>Totals</b>	<b>1,067</b>	<b>212</b>	<b>192</b>	<b>23</b>	<b>786</b>	<b>168</b>

\* The figures for G4S, SLG, and TDI were provided as at May 2023.

As regards international NGO operators, the proportion of female staff is generally slightly higher. As at March 2023, MAG reported that gender balance within its teams significantly improved following two female deminer-only training courses in 2022. In 2021, the first woman was awarded an EOD Level 2 qualification and received UNMAS accreditation.<sup>81</sup> While representation of women in managerial and supervisory positions is improving, it remains low, and women have been allocated half of the spaces on the next specialist training cycle, which will provide the skills needed for leadership and management positions.<sup>82</sup> MAG holds women-only focus groups to ensure that women's views are taken into consideration. It aims to recruit team members from the 60 plus ethnic groups within South Sudan and tries

to ensure that at least one team member speaks the local language in areas of operation.<sup>83</sup>

At DRC, four in every ten members of survey and community liaison teams are female. As co-coordinator of Mine Action Sub-Cluster, DRC has been advocating for female deminers to be integrated into security sector training programmes run by UN Women.<sup>84</sup> Clearance teams are composed of different ethnic groups and are roving unless there are security concerns for certain ethnicities.<sup>85</sup> DCA's survey team is gender balanced and runs separate sessions for children and women as well as mixed groups.<sup>86</sup> DCA is working to include different ethnicities among team members to facilitate engagement with different communities.<sup>87</sup>

## INFORMATION MANAGEMENT AND REPORTING

A comprehensive review of all data in South Sudan's IMSMA database was undertaken in 2018, along with re-survey of recorded SHAs and CHAs where the size was thought to be exaggerated or location mis-recorded. The database review found that past efforts to upgrade the IMSMA software package had led to serious data loss, which inhibited efforts to present an accurate record of the history of mine action in South Sudan. The review resulted in significant gains in the understanding of mine and ERW contamination.

In 2021, South Sudan was supported by the GICHD to upgrade its IMSMA database to IMSMA Core,<sup>88</sup> and in 2022 the major transition of IMSMA information to Survey123 was completed.<sup>89</sup>

80 Emails from Matt Williams, UNMAS South Sudan, 23 March 2023 and 2 June 2023; Eric Okoth, MAG, 20 March 2023; Lisa Müller-Dormann, DRC, 12 June 2023; and Hajrudin Osmanovic, DCA, 22 March and 13 June 2023.

81 Email from Lisa Müller-Dormann, then MAG, 22 March 2022.

82 Email from Eric Okoth, MAG, 20 March 2023.

83 Email from Lisa Müller-Dormann, then MAG, 22 March 2022.

84 Email from Lisa Müller-Dormann, DRC, 27 March 2023.

85 Ibid.

86 Email from Hajrudin Osmanovic, DCA, 14 March 2023.

87 Ibid.

88 Emails from Fran O'Grady, UNMISS, 9 March 2022; and Sasha Logie, GICHD, 21 April 2022.

89 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.



South Sudan submitted a voluntary CCM Article 7 report for the first time in 2020, despite not having yet acceded to the Convention. South Sudan submitted its fourth voluntary Article 7 report (covering 2022) in April 2023. The land release data contained within the most recent report (submitted on 30 April 2023 and accessed) contained discrepancies with that provided by UNMAS. As at July 2023, errors on the voluntary Article 7 report covering 2022 were expected to be corrected and a revised report resubmitted (further detail is provided below under the section, "Land Release Outputs and Progress towards Completion").<sup>90</sup> On 4 August 2023, South Sudan acceded to the CCM and will become a State Party on 1 February 2024. Under the CCM, South Sudan is legally required to report to the Secretary-General of the United Nations on Article 7 as soon as practicable, and no later than 180 days after becoming a State Party.

## PLANNING AND TASKING

The GICHD will support the NMAA with the development of a new mine action strategy in 2023.<sup>91</sup> South Sudan's most recent National Mine Action Strategy 2018–2022, developed with support from the GICHD with funding from Japan, had three strategic goals.<sup>92</sup>

- Goal 1: Advocacy and communication of South Sudan's mine/ERW problem continues through national and international awareness-raising and adoption and implementation of international conventions to facilitate a mine-/ERW-free South Sudan.
- Goal 2: The extent of mine/ERW contamination is clarified and confirmed and the problem addressed through appropriate survey and clearance, ensuring safe land is handed back to affected communities for use.
- Goal 3: Safe behaviour is promoted among women, girls, boys, and men to reduce mine/ERW accidents and promote safe livelihood activities.

A mid-term strategic review of the national strategy was conducted in January 2020 with national and international stakeholders and supported by the GICHD.<sup>93</sup> This fed into the operational clearance plan for 2020–21 which adopted a pragmatic approach to prioritisation focusing on efficient deployment of resources. In 2021–22 the operational focus was on securing safe access and creating a more secure environment for affected communities and returnees by conducting survey, mechanical and manual area clearance, and road clearance.<sup>94</sup> The programme continues to practise a proven approach based on efficient deployment of available resources in line with prioritisation defined by the annual clearance work plan. The plan is normally approved in June and reviewed mid-term, to reflect any operational changes.<sup>95</sup>

In an updated work plan covering January 2022 to June 2026, submitted to the APMBBC Committee on Article 5 Implementation, dated 31 April 2022 [sic], the NMAA indicated that going forward, CMR clearance teams were expected to clear 2,500m<sup>2</sup> per team per day with a 10% margin of safety added to the overall requirement.<sup>96</sup> According to its revised 2020 APMBBC Article 5 deadline extension request, South Sudan intended to address all explosive contamination by its new deadline of 2026,<sup>97</sup> and the updated work plan indicates that it would clear 7,200,000m<sup>2</sup> in the five years to 2026.<sup>98</sup> However, UNMAS has reported more recently that South Sudan is unlikely to clear CMR contamination by 2026 due to the historical underestimated size of cluster strikes, access difficulties, discovery of additional cluster strikes, and a high likelihood of a decrease in funding for clearance operations.<sup>99</sup>

There has been no progress with developing an independent national capacity for clearing residual contamination. However, through their implementing partners, UNMAS fielded 24 commercial demining teams, employing national deminers, with four teams led by national team leaders. The three international NGOs (DCA, DRC, and MAG) fielded another 12 national demining teams.<sup>100</sup>

Coordination between UNMAS and the international NGO operators could be stronger. International NGOs, for example, usually pre-select task locations with donors without reference to UNMAS,<sup>101</sup> and UNMAS reportedly allocates tasks to commercial operators in areas where international NGOs are already present with established relationships with the local community.<sup>102</sup>

90 Email from Matt Williams, UNMAS South Sudan, 19 June 2023.

91 Remarks by Fran O'Grady, Chief of Mine Action, at a meeting with UNMAS, Juba, 30 May 2023.

92 Emails from Tim Lardner, UNMAS, 27 February and 1 March 2018; and Richard Boulter, UNMAS, 6 June 2018.

93 Email from GICHD, 29 June 2021.

94 Email from Fran O'Grady, UNMISS, 9 March 2022.

95 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

96 South Sudan's updated work plan, p. 34, submitted to the APMBBC Committee on Article 5 Implementation, 31 April 2022 [sic].

97 Revised 2020 Article 5 deadline Extension Request, p. 75.

98 South Sudan's updated work plan, submitted to the APMBBC Committee on Article 5 Implementation, 31 April 2022 [sic], p. 14.

99 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

100 Ibid.

101 Remarks by Matt Williams, Senior Programme Officer, at a meeting with UNMAS, Juba, 30 May 2023.

102 Interview with Lisa Müller-Dormann, DRC, 21 May 2023.



# LAND RELEASE SYSTEM

## STANDARDS AND LAND RELEASE EFFICIENCY

South Sudan's NTSGs, which outline the technical requirements expected of all demining operators working in South Sudan, are adapted from the IMAS. The NTSGs are annually reviewed and revised by UNMAS in consultation with implementing partners and the NMAA,<sup>103</sup> taking into account any lessons learned during the year and addressing any changes in IMAS.<sup>104</sup> These standards and guidelines contain provisions specific to CMR survey and clearance<sup>105</sup> and are said to be fully adapted to the local context for survey and clearance.<sup>106</sup>

Both UNMAS and MAG have reported that a considerable number of initial survey reports of CMR-contaminated areas have underestimated the extent of the contamination. According to UNMAS, initial survey reports normally consider the known locations of submunitions, creating polygons around them in the form of a minimal 50 metre fade-out from the last item. UNMAS reports that while this ensures accurate information in terms of reporting CHAs, it underestimates the real extent of contamination which, as indicated above, is revealed only through actual clearance and fade-out expansion.<sup>107</sup>

MAG has indicated that this often makes it difficult to accurately plan for the time and resources needed to address each task so begins CMR clearance with the expectation

that the task area will reach at least 60,000m<sup>2</sup> and at times has encountered CMR tasks that had to be expanded by more than 100,000m<sup>2</sup> above the original estimate. MAG has also indicated that the fade-out requirements of the NTSGs sometimes resulted in handover of cleared land while simultaneously creating a new "hazardous area" comprising the fade-out distance.<sup>108</sup> UNMAS reported that often in a recorded strike area, multiple cluster munition canisters are found, with the consequence that the overall contaminated area extends well beyond an expected standard footprint.<sup>109</sup>

South Sudan reports having developed a strong methodology for clearing CMR using large-loop detectors, allowing operators to discriminate between potential submunitions and metallic clutter. Operators have further enhanced productivity by using mechanical vegetation-cutting equipment.<sup>110</sup>

UNMAS has noted that the NTSGs require all mine action teams to conduct regular internal quality assurance (QA), along with quality control (QC) sampling of 10% of each area cleared.<sup>111</sup> The minimum frequency for the organisational senior management internal QA visits to each team was set at one per month in 2021 and a standardised scoring matrix was introduced for the EOD written examination.<sup>112</sup>

## OPERATORS AND OPERATIONAL TOOLS

Clearance teams in South Sudan are normally accredited for and deployed to a variety of tasks, including CMR, anti-personnel mine (AP mine) and anti-vehicle mine (AV mine) clearance, EOD, and EORE. None is exclusively allocated to CMR activities.<sup>113</sup> All teams, except four NTS teams (see Table 3), are accredited to conduct multiple mine action activities, including clearance.

Table 3: Operational NTS capacities deployed in 2022<sup>114</sup>

Operator	NTS teams	Total NTS personnel	Comments
MAG	2	5	NTS/EOD spot capability
DRC	1	8	
DCA	1	12	
<b>Totals</b>	<b>4</b>	<b>25</b>	

103 Article 7 Report (covering 2019), Form 4; email from Matt Williams, UNMAS South Sudan, 23 March 2023.

104 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

105 Email from Robert Thompson, Chief of Operations, UNMAS, 21 April 2016; and responses to questionnaire, 30 March 2015; and email from Augustino Seja, Norwegian People's Aid (NPA), 11 May 2015.

106 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

107 Ibid.

108 Email from Katie Shaw, Programme Officer, MAG, 26 April 2019.

109 Emails from Tim Lardner, UNMAS, 27 February and 1 March 2018.

110 South Sudan's updated work plan, p. 19, submitted to the APMBC Committee on Article 5 Implementation, 31 April 2022 [sic].

111 Email from Ayaka Amano, UNMAS, 2 May 2019.

112 Email from Fran O'Grady, UNMISS, 9 March 2022.

113 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

114 Ibid.

UNMAS reported that 36 teams from three commercial companies (G4S, TDI, and SLG) and three international NGOs (DCA, DRC, and MAG) conducted CMR survey and clearance tasks in 2022.<sup>115</sup> This is an increase from 22/23 teams in 2021 while the number of operators stayed constant.<sup>116</sup> The number of operational personnel involved in CMR technical survey (TS) and clearance during 2022 was 447 (see Table 4), up from 290 personnel in 2021.<sup>117</sup> No major changes in the number of survey or clearance personnel were expected in 2023.<sup>118</sup> MAG expects to deploy an additional team focused on NTS and other assessments to support its operations,<sup>119</sup> while in January 2023, the number of DCA teams decreased from two to one.<sup>120</sup> By May 2023, however, DRC and DCA were both facing funding shortfalls and the prospect of cutting staff and operations.<sup>121</sup> The only increase in mechanical capacity in 2022 was DCA's deployment of a MW240 from August 2022; another slight increase was expected in 2023 (one MW240 and one GCS100 are to be used by integrated clearance capacity teams).<sup>122</sup>

**Table 4: Operational TS and clearance capacities deployed in 2022 (data provided by UNMAS)<sup>123</sup>**

Operator	Manual teams	Total personnel	Dogs and dog handlers	Mechanical assets
G4S	12	180	3/3	2 x TRAXX RC562
SLG	8	120	0	0
TDI	4	50	6/6	2 (1 x MW240, 1 x MW330)
MAG*	4	60	0	3 (1 x PT300, 2 x Bozena 4)
DRC	2	20	0	0
DCA	2	17	0	1 MW240 from August 2022
<b>Totals</b>	<b>32</b>	<b>447</b>	<b>9/9</b>	<b>8</b>

\* MAG had six teams at the start of 2022 with 78 personnel, which decreased to four clearance teams with 60 staff in September.<sup>124</sup>

There were two incidents in 2022 where UNMAS implementing partner demining teams were robbed at gunpoint. One resulted in the minor loss of equipment and some personal belongings and the other involved the loss of demining supplies, including 13 lithium rechargeable detector batteries and medical equipment. No personnel were injured in either incident.<sup>125</sup>

## LAND RELEASE OUTPUTS AND PROGRESS TOWARDS COMPLETION

### LAND RELEASE OUTPUTS IN 2022

According to UNMAS, a total of just over 4.3km<sup>2</sup> of CMR-contaminated area was released through survey and clearance in 2022. Of this, less than 0.02km<sup>2</sup> was cancelled through NTS and just over 4.29km<sup>2</sup> was cleared; a miniscule amount, just 359m<sup>2</sup>, was reduced through TS.<sup>126</sup> However, as previously mentioned and footnoted below, there are significant discrepancies with data provided in South Sudan's voluntary Article 7 report covering 2022 (submitted on 30 April and accessed), and as at July 2023 it was planned for the errors to be corrected and a revised Article 7 report re-submitted. In addition, a total of 157,189m<sup>2</sup> of previously unrecorded CMR contamination was added to South Sudan's mine action information management database in 2022.<sup>127</sup>

<sup>115</sup> Ibid.

<sup>116</sup> Emails from Fran O'Grady, UNMISS, 9 March 2022; Lisa Müller-Dormann, then MAG, 22 March 2022; and Matt Williams, UNMAS South Sudan, 23 March 2023.

<sup>117</sup> Ibid.

<sup>118</sup> Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

<sup>119</sup> Email from Eric Okoth, MAG, 20 March 2023.

<sup>120</sup> Email from Hajrudin Osmanovic, DCA, 22 March 2023.

<sup>121</sup> Interviews with Lisa Müller-Dormann, DRC, 21 May 2023; and Janardhan Rao, DCA, 26 May 2023.

<sup>122</sup> Email from Matt Williams, UNMAS South Sudan, 3 May 2023.

<sup>123</sup> Emails from Matt Williams, UNMAS South Sudan, 23 March 2023; and Clement Suwali, Operations Manager, DRC, 2 May 2023.

<sup>124</sup> Email from Leah Grace, Programme Officer, MAG, 25 April 2023.

<sup>125</sup> Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

<sup>126</sup> Ibid; and email from Matt Williams, UNMAS South Sudan, 19 June 2023.

<sup>127</sup> Email from Matt Williams, UNMAS South Sudan, 23 March 2023. South Sudan's original Voluntary CCM Article 7 Report (covering 2022), pp. 13–14, indicated that 587,815m<sup>2</sup> of previously unrecorded CMR contamination was discovered in 2022.

## SURVEY IN 2022

In 2022, a total of 15,433m<sup>2</sup> was cancelled through NTS, all in Eastern Equatoria (see Table 5),<sup>128</sup> a huge decrease from the 466,954m<sup>2</sup> of suspected CMR contamination cancelled through NTS in Eastern Equatoria, Western Equatoria, and Western Bahr El Ghazal in 2021.<sup>129</sup> The main reason for the decrease in area cancelled was the "exhaustion" of recorded open hazardous areas requiring resurvey and revision of polygon sizes.<sup>130</sup>

In 2022, just 359m<sup>2</sup> of hazardous area was reduced through TS (see Table 6), also in Eastern Equatoria,<sup>131</sup> whereas no land was reduced in 2021.<sup>132</sup>

**Table 5: Cancellation through NTS in 2022 (data provided by UNMAS)<sup>133</sup>**

State	Operator	Area cancelled (m <sup>2</sup> )
Eastern Equatoria	SLG	2,784
Eastern Equatoria	MAG	10,168
Eastern Equatoria	DRC	2,481
<b>Total</b>		<b>15,433</b>

**Table 6: Reduction through TS in 2022 (data provided by UNMAS)<sup>134</sup>**

State	Operator	Area cancelled (m <sup>2</sup> )
Eastern Equatoria	G4S	359
<b>Total</b>		<b>359</b>

## CLEARANCE IN 2022

In 2022, a total of almost 4.3km<sup>2</sup> of CMR-contaminated area was cleared with 3,320 submunitions destroyed, including 90 during EOD spot tasks (see Table 7).<sup>135</sup> This is an increase from the 3.4km<sup>2</sup> of CMR-contaminated area cleared and the 2,851 submunitions destroyed in 2021.<sup>136</sup>

The main reason for the increase in clearance in 2022 was a six-month restriction imposed by national security services in 2021 on operations to the south and east of Juba in areas with a high level of CMR contamination. Teams were allocated to other tasks, mainly anti-personnel minefields in the east of the country, resulting in lower CMR clearance.

**Table 7: CMR clearance in 2022<sup>137</sup>**

State	Operator	Area cleared (m <sup>2</sup> )	Submunitions destroyed	Other UXO destroyed
Central Equatoria	G43	209,109	71	7
Central Equatoria	SLG	157,034	92	79
Eastern Equatoria	DCA	223,983	387	0
Eastern Equatoria	DRC	425,177	232	2
Eastern Equatoria	G4S	644,685	479	12
Eastern Equatoria	MAG	939,651	1,247	4
Eastern Equatoria	SLG	305,812	195	2
Jonglei	SLG	282,667	20	10
Lakes	G4S	197,591	82	1

128 Emails from Matt Williams, UNMAS South Sudan, 23 March and 19 June 2023. South Sudan's original Voluntary CCM Article 7 Report (covering 2022), submitted 30 April 2023, pp. 15 and 21, indicated that 4,452,613m<sup>2</sup> of CMR contamination was cancelled through NTS in 2022, but the figure appears to include cancelled area from earlier years.

129 Email from Fran O'Grady, UNMISS, 9 March 2022.

130 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

131 Ibid. The original Voluntary CCM Article 7 Report (covering 2022), submitted 30 April 2023, alternatively suggests that 611,629m<sup>2</sup> (p. 22) or 3,611,629m<sup>2</sup> (p. 44) of CMR-contaminated area was "reduced" through "non-technical survey", although the latter figure may include NTS from earlier years.

132 Email from Fran O'Grady, UNMISS, 9 March 2022.

133 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

134 Ibid.

135 Ibid. The Voluntary CCM Article 7 Report (covering 2022), pp. 22–44, indicates that 28,391,041m<sup>2</sup> of contaminated area was cleared, with 20,632 submunitions and 2,089 other items of unexploded ordnance (UXO) destroyed; the figures may include clearance and destruction of submunitions from earlier years.

136 Email from Fran O'Grady, UNMISS, 9 March 2022.

137 Emails from Matt Williams, UNMAS South Sudan, 23 March and 19 June 2023.

Upper Nile	G4S	109,346	18	9
State	Operator	Area cleared (m <sup>2</sup> )	Submunitions destroyed	Other UXO destroyed
Upper Nile*	DRC	191,188	30	4
Western Bahr El Ghazal	SLG	47,280	29	0
Western Equatoria	G4S	564,234	348	7
Spot tasks		N/A	90	
Totals		4,297,757	3,320	137

Only one task, cleared by MAG in Central Equatoria and covering 89,837m<sup>2</sup>, contained no CMR.<sup>138</sup>

In addition, a total of 90 submunitions were destroyed during EOD spot tasks,<sup>139</sup> an increase on the 71 submunitions destroyed during EOD spot tasks in 2021.<sup>140</sup>

## PROGRESS TOWARDS COMPLETION

On 4 August 2023, South Sudan deposited its instrument of accession with the UN Secretary-General in New York. South Sudan becomes a State Party on 1 February 2024 and its Article 4 clearance deadline will therefore be 1 February 2034. South Sudan should be able to complete clearance of CMR well within its initial 10-year deadline under the CCM.

Until recent years, primarily due to conflict, it was impossible to predict when South Sudan might complete clearance of CMR, or even assess the true extent of contamination.<sup>141</sup> With improvements in the security situation, progress in the release of CMR-contaminated areas, and a comprehensive database review, the situation had begun to look more positive. However, it is reported that not all political parties are adhering to the 2018 Revitalized Agreement on the Cessation of Hostilities in South Sudan (R-ARCSS),<sup>142</sup> and that other insecurity issues continue. Frequent relocation of large teams has affected the implementation of the work plan and hindered operational efficiency.<sup>143</sup>

According to South Sudan's revised 2020 APMBC Article 5 deadline extension request, clearance of all CMR-contaminated areas was expected by July 2026 along with completion of mine clearance. The extension request clearly set out the primary assumptions and risk factors in the implementation of land release targets,

which were contingent on the level of funding being maintained and having access to contaminated areas.<sup>144</sup> In 2022, South Sudan needed to release 1.8km<sup>2</sup> of CMR- and other UXO-contaminated area to meet its target for the year<sup>145</sup> and far exceeded this, releasing almost 4.3km<sup>2</sup> of CMR-contaminated area alone.

Yet a range of logistical challenges remain. The poor state of South Sudan's infrastructure and seasonal rains and flooding mean that clearance in much of the country is only possible for eight months of the year, and in some areas, access is possible for as few as four months annually.<sup>146</sup> Furthermore, the methodology previously used to clear roads was flawed and several mines have been discovered on roads that had been declared safe, resulting in the need for re-clearance. Though this is occurring less frequently, it has diverted resources from clearance of CMR.<sup>147</sup> UNMAS has reported that South Sudan is now unlikely to be able to clear all CMR contamination by its own deadline of July 2026 primarily because of the underestimated size of CMR-contaminated areas; continued access difficulties due to insecurity and climatic factors; discovery of additional cluster strikes; and the high likelihood of a decrease in funding for clearance operations in coming years.<sup>148</sup>

138 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.

139 Ibid.

140 Email from Fran O'Grady, UNMISS, 9 March 2022.

141 Email from Ayaka Amano, UNMAS, 2 May 2019.

142 Presentation by South Sudan, APMBC Twentieth Meeting of States Parties, Geneva, 21–25 November 2022.

143 Ibid.

144 Email from Richard Boulter, UNMAS, 11 April 2021.

145 South Sudan's updated work plan, p. 14, submitted to the APMBC Committee on Article 5 Implementation, 31 April 2022.

146 Presentation by South Sudan, APMBC Twentieth Meeting of States Parties, Geneva, 21–25 November 2022.

147 Revised 2020 Article 5 deadline Extension Request, pp. 46–48; and email from Matt Williams, UNMAS South Sudan, 3 May 2023.

148 Email from Matt Williams, UNMAS South Sudan, 23 March 2023.