

# GICHD Insights

## ENVIRONMENTAL AND CLIMATE CONSIDERATIONS IN MINE ACTION

### INTRODUCTION

The global conversation on climate change and environmental protection has been developing for decades.<sup>1</sup> Yet, it is only in recent years that these critical issues have gained traction in the mine action sector, reflecting global awareness and the urgency that has taken hold since the 2000s.<sup>2</sup> Currently, the Anti-Personnel Mine Ban Convention (APMBC) addresses environmental and climate change considerations to a limited extent. The upcoming Review Conference of the APMBC and the Siem Reap-Angkor Action Plan present critical opportunities for the international community to align the Convention's strategic direction in order to address the challenges of climate change, biodiversity loss, and pollution, collectively known as the triple planetary crisis.<sup>3</sup>

This issue brief explores the key concepts of climate change and environment within the context of mine action, highlighting the need to understand their interrelation, especially with regard to the realities faced by communities affected by explosive ordnance (EO) contamination. The brief also outlines recent developments in the mine action normative framework, operational practices and donor requirements, showcasing the emergence of international good practice and increased accountability to ensure that the impact of mine action operations on climate change and the environment are minimized as far as possible. Lastly, the brief examines how APMBC States Parties can incorporate climate and environmental issues into the Siem Reap-Angkor Action plan, emphasizing the importance of balancing operational efficiency with long-term climate and environmental sustainability.

### THE INTERACTIONS BETWEEN MINE ACTION, ENVIRONMENT AND CLIMATE CHANGE

The terms environment and climate change are often used interchangeably, but their meanings differ. *Environment* refers to the surroundings in which an organization operates – this includes air, water, land, natural resources, flora, fauna, people and their interrelation. On the other hand, *climate change* refers to long-term shifts in temperatures and weather patterns.<sup>4</sup> Both terms are interlinked, as environmental protection is a key aspect of climate change resilience. There are several ways in which mine action, the environment and climate change can influence each other.

#### Climate change's impact on communities affected by EO

Many countries impacted by explosive ordnance contamination are also highly vulnerable to climate change. A recent study from the GICHD revealed that 60 per cent of the 20 countries most vulnerable to climate change are also contaminated with EO.<sup>5</sup> Climate-induced migration, for example, can force displaced communities into contaminated areas, increasing the risk of accidents. Similarly, reduced agricultural yields due to climate change may drive communities to seek alternative livelihoods in EO-contaminated areas, resulting in the adoption of risky behaviours (e.g. farming or collecting firewood in areas known to contain EO, collecting scrap metal or harvesting explosives).

#### Climate change's impact on explosive ordnance

Climate change-related events can also influence the location and behaviour of EO. In countries like Bosnia and Herzegovina<sup>6</sup> and Libya,<sup>7</sup> for example, flooding has been reported to have shifted explosive ordnance from uncleared to cleared areas. In some cases, rising temperatures and drier conditions have led to an increase in forest fires, which in turn can trigger the detonation of EO, as reported in Greece.<sup>8</sup>

## Climate change's impact on mine action operations

Climate change also directly affects the sector's ability to operate efficiently. Extreme weather events, such as heatwaves, flooding, cyclones, and storms, are becoming more frequent and more severe due to climate change. Climate-related events such as flooding can pose significant challenges to accessing remote contaminated areas, as illustrated during the 2020 floods in South Sudan.<sup>9</sup> Furthermore, extreme weather conditions pose health and safety risks for deminers, who are often required to work in hazardous environments under increasingly harsh conditions. These disruptions may not only impact the timeline of clearance operations but may also create additional costs and resource needs.<sup>10</sup>

## Mine action's impact on the environment

The mine action sector operates in diverse contexts, including environmentally protected areas such as national parks. Clearance operations, by nature, are intrusive and inevitably entail a degree of damage to the environment.<sup>11</sup> During survey and clearance, operators may need to cut or remove vegetation and topsoil to access contaminated areas.<sup>12</sup> This removal often leads to soil compaction, increased erosion, and the degradation of local ecosystems. The use of heavy machinery for mechanical clearance can lead to deforestation or destruction of natural habitats. Moreover, the removal of trees and vegetation also reduces the area's ability to sequester carbon, and decreases its natural resilience to climate-related hazards such as flooding and landslides. In addition to survey and clearance, other activities such as EO disposal also have environmental impacts.<sup>13</sup>

## Mine action's impact on climate change

The causes of climate change have been clearly established by the UN-established Intergovernmental Panel on Climate Change (IPCC): most human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, causing climate change.<sup>14</sup> While emissions from mine action operations may seem relatively small compared to those in other sectors, they nonetheless contribute to global warming and should be accounted for in the sector's overall environmental impact.<sup>15</sup>

## GROWING EMPHASIS IN POLICY AND PRACTICE

While the conversation on environment and mine action has been ongoing since the mid-2000s, it is only in recent years that the mine action sector has recognized the importance of systematically integrating environmental and climate considerations into its work.<sup>16</sup>

## Changes in International Mine Action Standards (IMAS)

The most notable step forward has been the revision of IMAS 07.13 Environmental management and climate change in mine action, which now explicitly addresses climate change. The revised IMAS emphasizes the importance of understanding how mine action interacts with environment and climate change factors in each specific context. This analysis allows mine action programmes to plan, implement and monitor operations, while ensuring minimal disruption to the environment. The revised IMAS also places greater importance on environmental and climate risk analysis and mitigation, and post-clearance land use planning.

Additionally, it expands the responsibilities of national mine action authorities (NMAA), mine action organizations and donors to integrate such considerations into their work. NMAAs are now expected to "establish a national environmental management and climate action policy"; mine action organizations are required to "leave the environment in a state that is similar to, or preferably better than, its condition prior to mine action operations"; and donors are encouraged to "request implementing partners to report on environmental measures".<sup>17</sup> A Technical Note for Mine Action will be published in autumn 2024 to guide the sector in the implementation of the revised IMAS.

## Changes in operators' practices

Mine action organizations have launched various projects incorporating environmental and climate components. These initiatives include efforts to reduce greenhouse gas emissions from operations by investing in sustainable capital equipment such as solar panels, or to better manage fuel consumption in field operations. Other initiatives have focused on post-clearance land use which aims to restore ecosystems (e.g. mangrove planting), promote sustainable agriculture and forestry (e.g. agroforestry), and support conservation and eco-tourism in national parks.<sup>18</sup>

The establishment of the Environmental Issues and Mine Action Working Group in 2019 has further advanced dialogue on these issues.<sup>19</sup> The working group meets regularly to share updates and information on international good practice in environmental and climate mainstreaming. Initially composed of mine action organizations, the working group has since expanded to include national mine action authorities and donors.

## Changes in donors' practices

Many donor states providing bilateral funding to national mine action programmes, increasingly require grantees to report on efforts to minimize the environmental and climate change-related impacts of their activities.<sup>20</sup> This trend reflects the growing emphasis on environmental protection and climate action, driven by national legislation and international commitments. Both donor and affected states are often signatories to treaties such as the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change (UNFCCC), which prioritize these issues. Notably, 84 per cent of UNFCCC States Parties are also Parties to the APMBC.

## CLIMATE AND ENVIRONMENT IN THE APMBC: STATE OF PLAY AND POSSIBLE NEXT STEPS

While the connection between mine action, the environment, and climate change have always existed, they have remained largely unaddressed in previous action plans of the APMBC, including in the Oslo Action Plan. While the APMBC requires that Article 5 extension requests include information on the environmental implications of the extension, such information is usually brief and refers mostly to access issues.<sup>21</sup>

It is therefore crucial to integrate and mainstream environmental and climate considerations into the Siem Reap-Angkor Action Plan, particularly in cross-cutting commitments related to national plans and mine action strategies, stockpile destruction and retention of anti-personnel mines, survey and clearance, mine risk education and reduction, victim assistance and international cooperation and assistance.

While this approach is undoubtedly necessary, it also presents challenges that States Parties should acknowledge. Incorporating environmental and climate issues may require the sector to make compromises and recalibrate its focus, balancing short-term wins with the long-term sustainability of mine action activities.

- ▶ Environmental and climate considerations should be included in policies, strategies, standards, and procedures as well as costed workplans. States Parties would need to determine whether their clearance deadlines need to be adjusted in light of these changes. States Parties facing the possibility of extended deadlines should be prepared to communicate the importance of balancing operational speed with long-term gains, emphasizing that the benefits for both communities and ecosystems outweigh short-term wins.

- ▶ In the short term, new environmental and climate-related requirements may increase costs. Mine action programmes will likely need to establish new systems, procure capital equipment and technologies to “green” institutions and operations, and develop new knowledge and skills to manage and implement activities that include environmental and climate considerations. While these investments may involve initial additional costs, they are expected to yield long-term savings. Realizing that these long-term benefits depend on securing funding for equipment and systems that often outlast the duration of donor grants, States Parties should consider the importance of sustained funding.
- ▶ States Parties should also reflect on the cost of inaction, which could be substantial. Land contaminated by EO is often left unused, leading to missed opportunities for sustainable agriculture, environmental protection, or renewable energy infrastructure such as solar power plants. This unused land results in communities losing out on both monetary benefits, such as agricultural production, and non-monetary benefits, such as healthy ecosystems.

## CONCLUSION

In its latest report, the IPCC warned that the window of opportunity to secure a liveable and sustainable future for all is rapidly closing.<sup>22</sup> The urgency of taking immediate, coordinated action to protect the environment and mitigate and adapt to climate change cannot be overstated. The mine action sector shares a responsibility to contribute to this effort, acting now in the interest of vulnerable communities already facing the threats posed by explosive ordnance.

By making these commitments and supporting the implementation of environmentally and climate-related actions in the new Action Plan, States Parties can play a vital role in addressing the triple planetary crisis of climate change, air pollution, and biodiversity loss, while continuing to pursue the objectives of the Convention.<sup>23</sup> The 2024 Review Conference offers a critical opportunity to mainstream these considerations within the global mine action agenda and set the stage for a more sustainable future.

*This issue brief was authored by Christelle Mestre.*

## Endnotes

- 1 The 1970 launch of Earth Day marked a turning point in global environmental awareness. The Brundtland Report in 1987 introduced sustainable development, and the 1992 Rio Earth Summit established the Convention on Biological Diversity and the UN Framework Convention on Climate Change — key milestones which have shaped the global climate and environmental agenda.
- 2 R. Kunelius and A. Roosvall, “Media and the Climate Crisis”, *Nordic Journal of Media Studies* Vol. 3, Iss. 1 (2021): 1–19, <https://sciendo.com/article/10.2478/njms-2021-0001?tab=article>  
Also: Since 2016, 2,359 jurisdictions in 40 countries have declared a climate emergency, <https://climateemergencydeclaration.org/climate-emergency-declarations-cover-15-million-citizens/>
- 3 United Nations Environment Programme, & International Science Council, “Navigating New Horizons: A global foresight report on planetary health and human wellbeing” (2024), <https://bit.ly/3X2WokJ>
- 4 Definitions in IMAS 07.13, Second Edition, Environmental management and climate change in mine action, 19 June 2024, <https://bit.ly/3AfX8tz>
- 5 GICHD (2023), “Mine Action and the Resilience of Communities to Climate Change”, <https://bit.ly/4ciUH6X>
- 6 GICHD (2023), “Difficult Terrain in Mine Action”, [https://www.gichd.org/fileadmin/user\\_upload/GICHD\\_Difficult\\_Terrain\\_A5\\_10\\_WEB.pdf](https://www.gichd.org/fileadmin/user_upload/GICHD_Difficult_Terrain_A5_10_WEB.pdf)
- 7 Kim Makhlof, “After Libya flood, unexploded weapons pose new risk”, Al Jazeera, 21 September 2023, <https://www.aljazeera.com/news/2023/9/21/after-libya-flood-unexploded-weapons-pose-new-risk>
- 8 Nektaria Stamouli, “Wildfires trigger explosions at ammo warehouse in Greece”, Politico, 27 July 2023, <https://www.politico.eu/article/greece-wildfire-explosions-ammo-warehouse/>
- 9 Ines Surwumwe, “Floods hampering UNMAS demining work in Jonglei State’s Pigi County”, *United Nations Mission in South Sudan (UNMISS)*, 17 January 2022, <https://unmiss.unmissions.org/floods-hampering-unmas-demining-work-jonglei-state%E2%80%99s-pigi-county>
- 10 Linsey Cottrell and Carlie Stowe, “Climate Change and Extreme Weather: How Can Mine Action Programs Adapt to Our Changing Environment?” *The Journal of Conventional Weapons Destruction*, Vol. 25, Iss. 2, Article 6 (2021), <https://commons.lib.jmu.edu/cisr-journal/vol25/iss2/6>
- 11 Ursign Hofmann and Pascal Rapillard, “Do No Harm in Mine Action: Why the Environment Matters”, *The Journal of ERW and Mine Action*, Issue 19.1 (2015), [https://www.gichd.org/fileadmin/user\\_upload/Do\\_No\\_Harm\\_in\\_Mine\\_Action\\_Why\\_the\\_Environment\\_Matters\\_-\\_Copy.pdf](https://www.gichd.org/fileadmin/user_upload/Do_No_Harm_in_Mine_Action_Why_the_Environment_Matters_-_Copy.pdf)
- 12 GICHD, “‘Do no harm’ and mine action: Protecting the environment while removing the remnants of conflict”, *Peacebuilding and Environmental Damage in Contemporary Jus Post Bellum Seminar organized by the University of Leiden*, 11–12 June 2014, <https://www.gichd.org/fileadmin/uploads/gichd/Publications/Do-no-harm-and-mine-action-Leiden-University-Jun2014.pdf>
- 13 GICHD (2021), “Guide to Explosive Ordnance Pollution of the Environment”, [https://www.gichd.org/fileadmin/uploads/gichd/Publications/EO\\_Pollution\\_of\\_the\\_Environment\\_v17\\_web\\_01.pdf](https://www.gichd.org/fileadmin/uploads/gichd/Publications/EO_Pollution_of_the_Environment_v17_web_01.pdf)
- 14 IPCC: Sections (2023). In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35–115. [https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC\\_AR6\\_SYR\\_LongerReport.pdf](https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf)
- 15 Moritz Hauer and Emilia Wahlström, “IASC Guidance: Environmental Responsibility in Humanitarian Operations”, Inter-Agency Standing Committee, 2023, <https://interagencystandingcommittee.org/sites/default/files/2023-12/IASC%20Guidance%20on%20Environmental%20Responsibility%20in%20Humanitarian%20Operations.pdf>
- 16 While articles on this topic have been published since the mid-2000s, the first edition of IMAS 07.13 Environmental management in mine action, was only published in 2017. See also: Faiz Pakhtian, “Mine Action and the Environment”, *The Journal of ERW and Mine Action*, Vol. 11, Iss. 2, Article 16 (2008), <https://commons.lib.jmu.edu/cisr-journal/vol11/iss2/16>
- 17 IMAS 07.13, Second Edition, “Environmental management and climate change in mine action”, 19 June 2024, <https://bit.ly/3AfX8tz>
- 18 Emily Chrystie, “Environmental Mainstreaming in Mine Action: A Case Study of Moving Beyond ‘Do No Harm’”, *The Journal of Conventional Weapons Destruction*, Vol. 27, Iss. 2, Article 5 (2023), <https://commons.lib.jmu.edu/cisr-journal/vol27/iss2/5>  
See also: APOPO has been promoting sustainable agricultural practices with its pilot project, HeroTREES, in Zimbabwe and planned follow-up project in Cambodia, [https://apopo.org/herotrees/?\\_gl=1\\*2s9gmy\\*\\_up\\*MQ..\\*\\_ga\\*MjA5ODgzMTg2Mi4xNzI2NjUzNzM5\\*\\_ga\\_TJ8958P41M\\*MTcyNjY1MzczOC4xLjEu\\_MTcyNjY1Mzg5Ni4wLjAuMTU3ODY0MTA0MA](https://apopo.org/herotrees/?_gl=1*2s9gmy*_up*MQ..*_ga*MjA5ODgzMTg2Mi4xNzI2NjUzNzM5*_ga_TJ8958P41M*MTcyNjY1MzczOC4xLjEu_MTcyNjY1Mzg5Ni4wLjAuMTU3ODY0MTA0MA)  
See also: The HALO Trust, “Clearing Landmines for Conservation”, 3 March 2020, <https://www.halotrust.org/latest/halo-updates/news/world-wildlife-day-2020/>
- 19 <https://environmentinmineaction.org/>
- 20 Some government donors like Sweden have published such guidelines online. Other government donors like the UK and the Netherlands have shared such requirements with grantees directly.
- 21 Mine Action Review (2021), “Mitigating the Environmental Impacts of Explosive Ordnance and Land Release”, Policy Brief No. 1 2021, [https://www.mineactionreview.org/assets/downloads/MITIGATING\\_THE\\_ENVIRONMENTAL\\_IMPACT\\_OF\\_EXPLOSIVE\\_ORDNANCE\\_AND\\_LAND\\_RELEASE.pdf](https://www.mineactionreview.org/assets/downloads/MITIGATING_THE_ENVIRONMENTAL_IMPACT_OF_EXPLOSIVE_ORDNANCE_AND_LAND_RELEASE.pdf)
- 22 IPCC: Sections (2023). In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 35–115. [https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC\\_AR6\\_SYR\\_LongerReport.pdf](https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf)
- 23 United Nations Environment Programme, & International Science Council, “Navigating New Horizons: A global foresight report on planetary health and human wellbeing” (2024), <https://bit.ly/3X2WokJ>

The GICHD works to reduce risks to communities stemming from explosive ordnance, with a focus on landmines, cluster munitions, explosive remnants of war, and unsafely and insecurely managed conventional ammunition. As an internationally recognized centre of expertise and knowledge, the GICHD helps national authorities, international and regional organizations, NGOs and operators in around 40 affected countries and territories to develop and professionalize mine action and ammunition management.

Through its work, the GICHD strives for the fulfilment of international obligations, for national targets to be reached, and communities’ protection from and resilience to explosive harm to be enhanced. These efforts support sustainable livelihoods, gender equality and inclusion. They save lives, facilitate the safe return of displaced populations, and promote peace and sustainable development.

