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THE SUSTAINABLE DEVELOPMENT OUTCOMES OF MINE ACTION IN BOSNIA AND HERZEGOVINA

Cover: Deminer from Norwegian People's Aid (NPA) conducting field operations in BiH.
Source: GICHD and Johannes Müller

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DEVELOPMENT OUTCOMES
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CONTRIBUTORS

GENEVA INTERNATIONAL CENTRE FOR HUMANITARIAN DEMINING (GICHD)

The Geneva International Centre for Humanitarian Demining works towards reducing risk to communities caused by explosive ordnance, with a focus on landmines, cluster munitions and ammunition stockpiles.

The Centre helps develop and professionalise the sector for the benefits of its partners: national and local authorities, donors, the United Nations, other international and regional organisations, non-governmental organisations, commercial companies and academia. It does so by combining four lines of service: field support focused on advice and training, multilateral work focused on norms and standards, research and development focused on cutting-edge solutions, and facilitating dialogue and cooperation.

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BOSNIA AND HERZEGOVINA MINE ACTION CENTRE (BHMIC)

BHMIC is Bosnia and Herzegovina's national mine action authority and functions as the technical body of the BiH Demining Commission. It was established in 1996 after the end of the war and signing of the Dayton Peace Agreement, with the aim of building local operational and structural capacities related to the demining process.

BHMAC is responsible for managing the planning, prioritisation, and implementation of all programmes and activities related to mine and explosive remnants of war (ERW). This includes mine and ERW clearance, mine risk education, survivor and victim assistance, maintenance of a central database, resource mobilisation, and training programmes.

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The authors of this study are Ángela Hoyos Iborra (lead researcher), Arsen Khanyan, and Nadine Skaff from the GICHD.

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LIST OF ACRONYMS AND ABBREVIATIONS

APMBC	Anti-Personnel Mine Ban Convention	GDP	Gross domestic product
BHMAC	Bosnia and Herzegovina Mine Action Centre	ICRC	International Committee of the Red Cross
BHMAIS	Bosnia and Herzegovina Mine Action Information System	IDP	Internally displaced person
BIH	Bosnia and Herzegovina	IFOR	NATO-led Implementation Force
CBR	Community-based rehabilitation	IMAS	International Mine Action Standards
CCM	Convention on Cluster Munitions	IOM	International Organization for Migration
CHA	Confirmed hazardous area	LOT	Liaison and Observation team
CMR	Cluster munition remnants	MAG	Mines Advisory Group
EO	Explosive ordnance	MRE	Mine risk education
EORE	Explosive ordnance risk education	MSA	Mine suspected area
ERW	Explosive remnants of war	MVACB	Mine Victim Assistance Coordination Body
EU	European Union	NGO	Non-governmental organisation
EUFOR	European Union Force (in BiH)	NPA	Norwegian People's Aid
FBIH	Federation of Bosnia and Herzegovina	NTS	Non-technical survey
		PWD	Person with disabilities
		RS	Republika Srpska

SDG	Sustainable Development Goal
SHA	Suspected hazardous area
TS	Technical survey
UDAS	Organization for Amputees Republike Srpske
UNDP	United Nations Development Programme
UNMAC	United Nations Mine Action Centre
UXO	Unexploded ordnance
VA	Victim assistance

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KEY FINDINGS

This study comprehensively maps the sustainable development outcomes of mine action activities in Bosnia and Herzegovina (BiH). It analyses the impact of land release, victim assistance, explosive ordnance risk education (EORE), and existing efforts related to gender mainstreaming, and partnerships and cooperation, in the medium and long term.

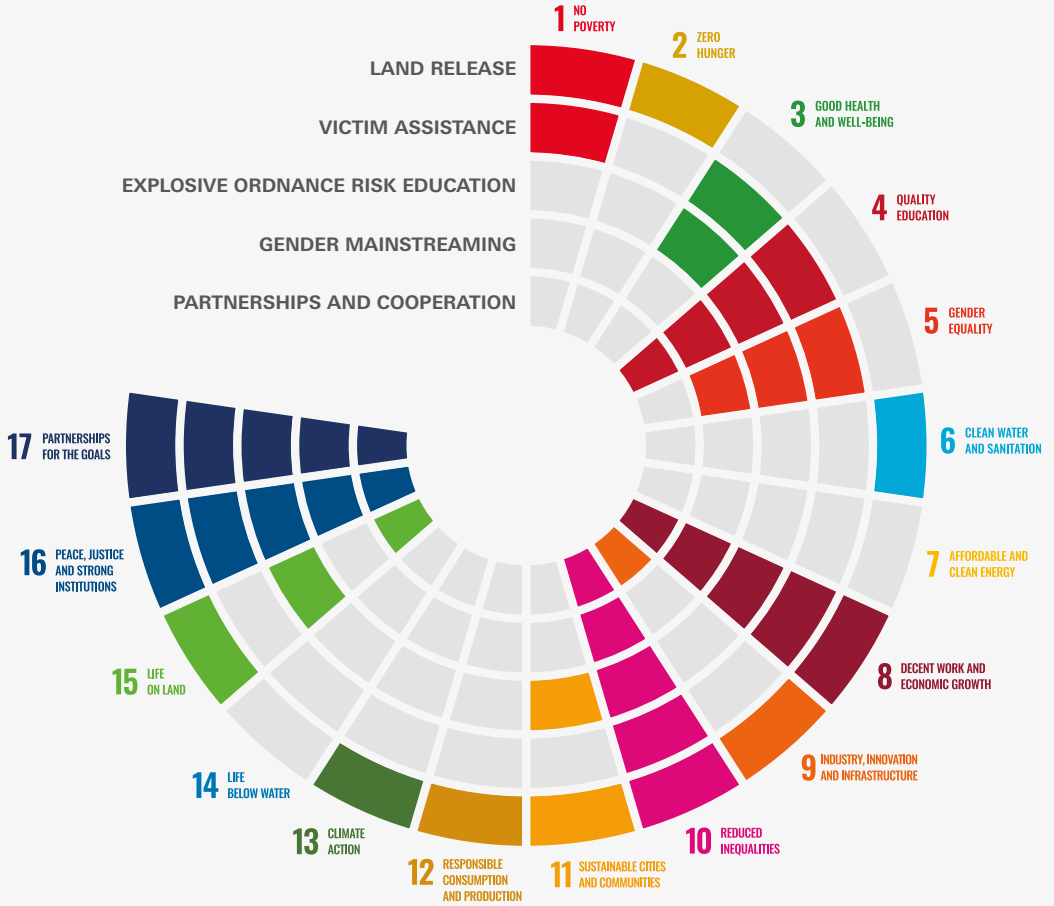
The study presents evidence of the multidimensional and transformative role of mine action in BiH by identifying its direct contribution to **15 Sustainable Development Goals (SDGs)** and to at least **60 of their targets**. Hence, the mine action sector has clearly contributed to the five dimensions of the 2030 Agenda for Sustainable Development: partnership, peace, people, planet and prosperity.

FIGURE 1 CONTRIBUTION OF MINE ACTION TO THE SDGs IN BIH



FIGURE 2

CONTRIBUTION OF MINE ACTION TO THE SDGs BY ACTIVITY IN BIH



LAND RELEASE



As one of the most heavily mined countries in Europe, contamination in BiH includes explosive remnants of war (ERW) and cluster munition remnants. While pervasive throughout the country, contamination is concentrated along the Inter-Entity Boundary confrontation line between the Federation of Bosnia and Herzegovina and Republika Srpska. In proximity to this, the study examines the impact of land release in 13 preselected locations in central BiH and in the north-east region.

Besides the immediate contribution to SDG 16 and its target 16.1 on the reduction of all forms of violence, the study identifies the direct contribution of land release to 12 SDGs and 35 of their associated targets.

HOUSING RECONSTRUCTION EFFORTS

By facilitating the reconstruction and expansion of housing and residential areas for returnees and advancing urbanisation, land release has contributed to **SDG 9** Industry, innovation and infrastructure and its **target 9.1** on developing infrastructure, to support economic development and human well-being, and **target 9.2** on promoting inclusive and sustainable

industrialisation and raising the industrial share of employment and gross domestic product (GDP). As a prerequisite to post-conflict housing reconstruction efforts, land release is a direct contributor to **SDG 11** Sustainable cities and communities and its **target 11.1** on ensuring access to safe and affordable housing, and **target 11.3** on enhancing sustainable urbanisation.

FLOOD PREVENTION

By assuring safe access, in order for flood prevention efforts and infrastructure projects to be carried out, land release contributed to **SDG 11** Sustainable cities and communities, and in particular its **target 11.5** on significantly reducing the number of deaths and number of people affected as well as decreasing the direct economic losses relative to global GDP caused by disasters, including water-related disasters, as well as **target 11.b** on implementing integrated plans towards adaptation to climate change and resilience to disasters. It also contributes to **SDG 6** Clean water and sanitation by protecting against water contamination and further erosion, linking to **target 6.3** on improving water quality by reducing pollution, eliminating dumping and minimising the release of hazardous chemicals and materials and to **target 6.6** on protecting and restoring water-related ecosystems. The role of mine action in facilitating flood prevention, in turn supports the cultivation of agricultural lands, contributing to **SDG 2** Zero hunger, particularly its **target 2.4** on ensuring sustainable food production systems and implementing resilient agricultural practices that help maintain ecosystems and strengthen capacity for adaptation to climate change, extreme weather and flooding, among other disasters, and that progressively improve land and soil quality.

ACCESS TO NATURAL RESOURCES

By enabling efficient use of natural resources through safe access, mine action has contributed to **SDG 12** Responsible consumption and production and its **target 12.2** on sustainable management of natural resources, as well as to **SDG 6** Clean water and sanitation, and its **target 6.4** on increased water-use efficiency.

Land release further contributes to **SDG 15** Life on land, particularly to **target 15.1** on ensuring conservation, restoration and the sustainable use of terrestrial ecosystems as well as **target 15.3** on restoring degraded land and soil affected by desertification, drought, and floods.

FORESTS

By unblocking land to ensure the safe management of forests, land release has contributed to **SDG 12** Responsible consumption and production, particularly its **target 12.2** to achieving the sustainable management and efficient use of natural resources. It also promotes **SDG 13** Climate action and its **target 13.1** on strengthening resilience and adaptive capacity to climate-related hazards and natural disasters like forest fires, and **SDG 15** Life on land and its **target 15.1** on ensuring conservation, restoration and sustainable use of terrestrial ecosystems, **target 15.2** towards promoting the implementation of sustainable management of all types of forests and **target 15.5** on taking action to reduce the degradation of natural habitats, halt the loss of biodiversity and protect and prevent the extinction of threatened species.

There are major economic implications for increased forest management capacities and unblocking access to forest-related natural resources as a result of land release, including reduction of rural poverty and promotion of livelihoods. Mine action thus contributes to **SDG 1** No poverty and its **target 1.4** on ensuring access to economic resources, and **target 1.5** on building the resilience of the poor and those in vulnerable situations by reducing their exposure to climate-related extreme events and environmental shocks and disasters, as well as **SDG 8** Decent work and economic growth and its **target 8.8** on ensuring safe and secure working environments for all.

AGRICULTURAL ACTIVITIES AND PRODUCTIVE USE OF LAND

By expanding access to arable fields and facilitating safe agricultural activities, land release directly contributes to **SDG 2** Zero hunger, and its **target 2.1** on ending hunger and ensuring access to safe, nutritious and sufficient food, **target 2.3** on doubling agricultural productivity and incomes of small-scale food producers, family farmers and herders, as well as securing access to land, and **target 2.4** on sustainable food production systems that increase productivity.

Given that BiH is dominated by small-scale, family-owned farms, mine action operations in agricultural zones at the local level contribute to **SDG 16** on promoting peaceful and inclusive societies for sustainable development, and in particular its **target 16.6** on building effective, accountable, and inclusive institutions at all levels, **target 16.7** on ensuring participatory and representative decision making at all levels, and **target 16.10** on ensuring public access to information. The development of new agricultural projects and support of small-scale farmers through mine action also promotes **SDG 8** Decent work and economic growth and its **target 8.2** on economic productivity through technological upgrading and diversification, and **target 8.5** on productive employment.

FACILITATING SAFE MOBILITY

By facilitating safe mobility of migrants, refugees, and asylum seekers, mine action has contributed to **SDG 10** Reduced inequalities and its **target 10.7** on facilitating orderly, safe, regular and responsible migration and mobility of people. In this vein, land release contributes to broader peace and security agendas, directly contributing to **SDG 16** Peace, justice and strong institutions.

The coordinated efforts between the Bosnia and Herzegovina Mine Action Centre (BHMIC), the International Organization for Migration and other operators involved in supporting migrants and displaced persons, is indicative of mine action's support to **SDG 17** Partnerships for the Goals

and its **target 17.16** on enhancing the global partnership for sustainable development, and **target 17.17** on enhancing public, public-private and civil society partnerships.

SUSTAINABLE ECONOMIC GROWTH AND INFRASTRUCTURE

As a precondition for safe access and investment for infrastructure projects that have significant economic and social implications for the country, including connection to regional trade flows and promoting connectivity especially in a rural context, land release contributes to **SDG 9** Industry, innovation and infrastructure. It particularly links to its **target 9.1** on developing infrastructure, including regional and transborder infrastructure, to support economic development, **target 9.2** on promoting industrialisation and raising the industrial share of employment and GDP, and **target 9.3** on increased access of small-scale enterprises to financial services.

By facilitating the safe and active use of roads, land release has further contributed to **SDG 8** Decent work and economic growth, particularly its **target 8.1** on sustaining per capita income growth, and **target 8.2** that aims to achieve higher levels of economic productivity through diversification, technological upgrading and innovation.

TOURISM

By enabling safe construction and other capacities for local businesses that promote tourist activities, mine action has contributed to **SDG 8** on promoting sustained, inclusive, and sustainable economic growth. It particularly links to its **target 8.1** on per capita economic growth, **target 8.3** on development-oriented productive activities, **target 8.4** on resource consumption efficiency, **target 8.5** on decent work, and especially to **target 8.9** on promoting sustainable tourism that creates local jobs. There are also linkages to **SDG 9** on building resilient infrastructure, particularly its **target 9.1** on developing sustainable infrastructure to support economic development.

Through allowing the safe practice of religious and spiritual activities, as well as commemoration of the war, mine action contributes to the promotion of social harmony and to **SDG 16** on promoting peaceful and inclusive societies, particularly its target **16.10** on ensuring public access to information.

VICTIM ASSISTANCE



In the period 1992–2019, a total of 8,419 direct victims of mines were registered in BiH (7,168 men, 488 women, 763 children). Of the total number of casualties, 6,103 survived. Data analysis of victims conducted by BHMACH indicated a decrease after the war ended, with 128 mine / ERW victims registered in the period 2009–2019. In 2021, four accidents occurred of which three were fatal. With no clearly defined government focal point for victim assistance in BiH, the Mine Victim Assistance Coordination Body was established as an official coordination mechanism in May 2018.

The study identifies the direct contribution of victim assistance to 8 SDGs and 24 of their associated targets.

Victim assistance efforts to protect the rights and address the needs of persons with disabilities (PWDs) have directly contributed to **SDG 3** on good health and well-being, in particular its target **3.8** on universal health coverage and quality healthcare services, and target **3.c** on increasing the financing, training and recruitment of the health workforce.

By adhering to various international instruments related to victim assistance, disability, and inclusiveness as well as by promoting social and economic inclusion and adopting national legislative and policy frameworks, victim

assistance has contributed to the achievement of **SDG 10** Reduced inequalities and its **target 10.2** aimed at empowering and promoting inclusion for all irrespective of, inter alia, disability, **target 10.3** on ensuring equal opportunities and reducing outcome inequalities, including by promoting appropriate legislation, policies and action in this regard, and **target 10.4** on adopting policies to achieve greater equality. There is also a linkage to **SDG 16** Justice, peace and strong institutions, and its **target 16.b** on promoting non-discriminatory laws and policies, **target 16.6** on developing effective and accountable institutions, and **target 16.7** on ensuring responsive, inclusive and representative decision making at all levels, and **target 16.10** on ensuring public access to information and protecting fundamental freedoms.

By facilitating universal access to healthcare services, including physical or psycho-social rehabilitation, as well as social and economic reintegration, there is also a link with **SDG 5** Gender equality, and its **target 5.1** on ending all forms of discrimination.

The establishment of institutional partnerships for victim assistance also links to **SDG 17** Partnerships for the Goals and its **target 17.6** on triangular regional and international cooperation to enhance access to mine action and victim assistance knowledge, **target 17.9** on enhanced international support for implementing effective and targeted capacity building, and **target 17.16** on knowledge sharing and expertise through multi-stakeholder partnerships, and **target 17.17** on enhancing public, public-private and civil society partnerships.

Through the provision of vocational training and other income-generating activities, as well as efforts to promote educational opportunities for survivors and their families, victim assistance has further contributed to **SDG 4** Quality education and its **target 4.3** on ensuring equal access to vocational and other education, **target 4.4** on increasing the number of adults who have skills for employment and decent jobs, **target 4.5** on ensuring equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, and **target 4.a** on providing safe, non-violent, inclusive, and effective learning environments for all. Through promoting access of PWDs to employment, victim

assistance has also contributed to **SDG 8** Decent work and economic growth and its **target 8.5** on achieving employment and decent work for all, including persons with disabilities.

By promoting access of victims to economic resources and financial services, victim assistance has directly contributed to **SDG 1** No poverty and its **target 1.3** on implementing nationally appropriate social protection systems and measures for all, **target 1.4** on ensuring that the poor and the vulnerable have equal rights to economic resources and financial services, and **target 1.5** on building resilience of the poor and vulnerable to shocks, and **target 1.b** on creating frameworks based on pro-poor and gender-sensitive development strategies.

By creating a positive setting which allows survivors the opportunity to engage in various forms of cultural and physical recreational activities, victim assistance contributes to the **target 4.a** on providing safe, non-violent, inclusive, and effective learning environments for all especially by means of peer support group initiatives as well as **target 4.7** ensuring education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

Ethnic inclusion through victim assistance activities can therefore contribute to the existence of a peaceful pluralist society. By building social cohesion and promoting dialogue across ethnic groups, victim assistance in BiH is linked to **SDG 16** and the promotion of peaceful and inclusive societies.

EXPLOSIVE ORDNANCE RISK EDUCATION



The Bosnia and Herzegovina Mine Action Centre officially applies the term ‘mine risk education’ (MRE) when referring to EORE activities. MRE has been formally integrated into BHMAC’s mine action agenda and reflected in the Bosnia and Herzegovina Mine Action Information System since 2003. BHMAC holds the mandate for defining mine action standards for MRE and the coordination of MRE activities throughout BiH in cooperation with other accredited organisations. BHMAC reports that 29,944 people received MRE (13,350 women and 16,594 men) in 2021 through its MRE programmes.

The study identifies the direct contribution of MRE to 9 SDGs and 17 of their associated targets.

Despite high contamination, the promotion of safe behaviour through MRE has resulted in the reduction in the number of accidents each year, directly linking to **SDG 16** and the promotion of peaceful and inclusive societies and its **target 16.1** on significantly reducing all forms of violence and related deaths, as well as its **target 16.6** on developing accountable and inclusive institutions at all levels by enabling the affected communities to

participate in priority setting and strengthening their skills to participate in these processes, and **target 16.7** on ensuring responsive, inclusive and representative decision making at all levels.

By extending its capacity to reach all groups and reducing risks from explosive ordnance for migrants, asylum seekers, and refugees arriving in BiH, mine risk education further contributes to **SDG 10** Reduced inequalities and its **target 10.7** on facilitating orderly, safe, regular and responsible migration and mobility of people.

By targeting women, girls, boys and men in accordance with their different vulnerabilities, roles and needs and by promoting safer behaviours, MRE efforts have also contributed to **SDG 4** Quality education, and its **target 4.5** on eliminating gender disparities in education at all levels for the vulnerable, and **target 4.a** on providing safe, non-violent, inclusive and effective learning environments for all. It has also contributed to progress towards **SDG 5** Gender equality and its **target 5.1** on ending all forms of discrimination against women and girls.

The collective impact of these developments has served to promote **SDG 3** Good health and well-being and its **target 3.d** on strengthening the capacity for early warning, risk education and management of health risks.

Through broad, integrated and quality data informing efforts to diminish the number of mine victims across affected communities in BiH, MRE contributes to **SDG 16** Peace, justice and strong institutions and its **target 16.1** on significantly reducing all forms of violence and related deaths by promoting a reduction of at-risk behaviour in a sustainable manner and increasing the security situation and perception of safety in contaminated areas.

The establishment of MRE partnerships in schools strongly connects to **SDG 17** Global partnerships for the Goals and its **target 17.9** on enhanced international support for implementing effective and targeted capacity building, **target 17.16** on knowledge sharing and expertise through multi-stakeholder partnerships, and **target 17.17** on enhancing public, public-private and civil society partnerships.

Given BHMAC's 'Mine Suspected Areas' app's interactive capabilities and public accessibility of more accurate data to all citizens, its application by various institutions in a range of contexts contributes to **SDG 17** Partnership for the Goals and its **target 17.18** on capacity-building support to improve access to quality data.

Promoting tourist safety through MRE data extracted with the mobile application, emergency marking of suspected hazardous areas conducted by BHMAC regional offices, along with other MRE programmes, increases the tourist potential of the given area. The long-term implications of this are in support of **SDG 8** Decent work and economic growth and its **target 8.9** on promoting sustainable tourism, as well as **SDG 4.7** on enhancing universal knowledge to promote sustainable tourism.

By enabling the protection of forests and tourist sites, MRE activities support the goal of **SDG 11** Sustainable cities and communities and its **target 11.4** on protecting and safeguarding the world's cultural and natural heritage. MRE also contributes to **SDG 15** Life on land and its **target 15.2** towards promoting the implementation of sustainable management of all types of forests and **target 15.5** on taking action to reduce the degradation of natural habitats, halt the loss of biodiversity and protect and prevent the extinction of threatened species.

GENDER MAINSTREAMING



The study identifies the direct contribution of gender mainstreaming to 6 SDGs and 13 of their associated targets.

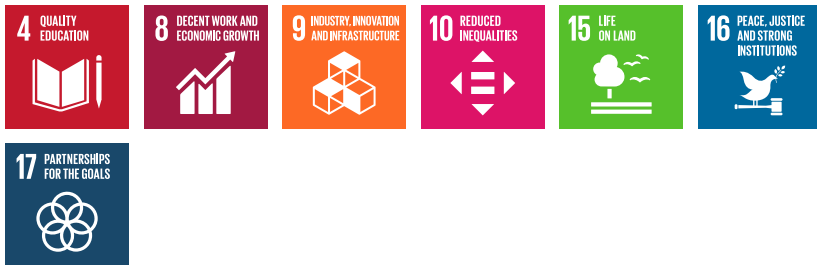
Gender mainstreaming efforts in mine action in BiH have helped increase female representation and participation contributing to **SDG 5** Gender equality and its **target 5.1** on ending all forms of discrimination against women and girls, **target 5.5** on ensuring women’s full and effective participation and equal opportunities for leadership at all levels, **target 5.a** on undertaking reforms to give women equal rights to economic and other resources, **target 5.c** on adopting policies for the promotion of gender equality, as well as to **SDG 16** Peace, justice and strong institutions and its **target 16.7** on ensuring inclusive decision making at all levels and **target 16.b** on non-discriminatory laws and policies.

By promoting equal employment opportunities and encouraging the recruitment of women, gender mainstreaming has also contributed to **SDG 8** Decent work and economic growth and its **target 8.5** on achieving full and productive employment and decent work for all. These efforts, in addition to initiatives that engage and promote representatives of different ethnic groups, have also contributed to **SDG 10** Reduced inequalities, particularly to its **target 10.2** aimed at empowering and promoting inclusion for all, **target 10.3** on ensuring equal opportunities and reducing outcome inequalities, and **target 10.4** on adopting policies to achieve greater equality.

In addition, mine action organisations' efforts to provide skills and training opportunities to their female employees have further contributed to **SDG 4** on ensuring inclusive and equitable education and its **target 4.4** on increasing the number of adults who have skills for employment and decent jobs and **target 4.5** on eliminating gender disparities in education.

Working in partnership with women and youth associations, mine action has promoted **SDG 17** on partnership and its **target 17.17** on enhancing public, public-private and civil society partnerships.

PARTNERSHIPS AND COOPERATION



The study identifies the direct contribution of partnerships and cooperation to 7 SDGs and 22 of their associated targets.

Through multi-stakeholder engagement and partnerships at different levels, mine action outcomes are closely linked to **SDG 17** Partnerships for the Goals and its **target 17.3** on mobilising financial resources for developing countries, **target 17.6** on enhancing all types of cooperation and knowledge sharing on mutually agreed terms, **target 17.9** on enhancing international support and supporting capacity building to implement all the SDGs, **target 17.16** on enhancing the global partnership for sustainable development, **target 17.17** on enhancing public, public-private and civil society partnerships, and **target 17.18** on capacity-building support to increase the availability of high-quality, timely, reliable, and disaggregated data.

As a result of several institutional partnerships, initiatives and engagements, mine action efforts have contributed to **SDG 4** Quality education and its **target 4.3** on ensuring equal access to vocational and other education, **target 4.4** on increasing the number of adults who have relevant technical and vocational skills for employment, decent jobs, and entrepreneurship, **target 4.5** on eliminating gender disparities in education and ensuring equal access to all levels of education and vocational training for the vulnerable,

including persons with disabilities, **target 4.7** on universal knowledge to promote sustainable development, and **target 4.a** on providing safe, non-violent, inclusive, and effective learning environments for all.

The coordinated efforts and knowledge sharing of partnerships in mine action has helped to further promote safe mobility not only for populations at risk, but MRE personnel themselves, particularly contributing to **SDG 10** on reducing inequalities within and among countries, in particular its **target 10.7** on facilitating safe migration and mobility of people and **target 10.b** on encouraging official development assistance and financial flows.

Knowledge sharing through partnerships has also contributed to the fulfillment of **SDG 15** Life on land and its **target 15.5** on halting the loss of biodiversity and the extinction of threatened species through the protection of bees. This collaboration further links to **SDG 8** Decent work and economic growth and its **target 8.3** on development-oriented productive activities, resource efficiency, and the decoupling of economic growth from environmental degradation as well as **target 8.5** on decent work.

As a result of partnerships for land release, critical infrastructure projects have been made possible, contributing to **SDG 8** and its **target 8.9** on promoting sustainable tourism that creates local jobs, as well as **SDG 9** Industry, innovation and infrastructure and its **target 9.1** on developing sustainable infrastructure to support economic development.

By promoting governance and strengthening institutional accountability towards both donors and beneficiaries, partnerships in mine action have also contributed to **SDG 16** Peace, justice and strong institutions and its **target 16.6** on developing effective, accountable and transparent institutions, **target 16.7** on participatory and representative decision making at all levels, **target 16.8** on broadening participation of developing countries in institutions of global governance, and **target 16.a** on strengthening relevant national institutions including through international cooperation, for building capacity at all levels.

PURPOSE AND METHODOLOGY

The purpose of this study is to map and analyse the overall sustainable development outcomes of mine action in Bosnia and Herzegovina (BiH), using the Sustainable Development Goals (SDGs) as an analytical framework. The study has been conducted in accordance with the Beyond Square Meters project as one of a series of country-level studies.

Beyond Square Meters: measuring the impact of humanitarian mine action on local sustainable development through the SDGs.

Funded by the German Federal Foreign Office, Beyond Square Meters is a project jointly implemented by the United Nations Development Programme and the GICHD. The project aims to demonstrate how mine action contributes to sustainable development and peace beyond the number of square metres and mines cleared.

It intends to strengthen the nexus between humanitarian mine action, development and peace efforts by improving coordination, planning, reporting and information sharing.

While the impact of mine action in terms of the square metres released and the reduction of casualties can be immediate and tangible, its contribution to broader sustainable development is more difficult to plan and measure in the medium and long term.

Thus, this study primarily attempts to identify the extent to which mine action activities have had a positive impact, considering diverse humanitarian, social, economic and environmental implications, using the SDGs and their targets as the frame of reference.

Building upon the achievements and lessons learnt from the Millennium Development Goals,¹ in 2015 the United Nations Member States adopted the 2030 Agenda for Sustainable Development as a new plan of action for the following 15 years.² The 2030 Agenda is universal, transformative and rights based, under the premise that ‘no one will be left behind’.³ It contains 17 integrated Sustainable Development Goals and 169 associated targets, which are based on the three core elements of sustainable development – economic growth, social inclusion, and environmental protection – and calls for peace and partnership.

There are five critical dimensions at the core of the 2030 Agenda, known as ‘the 5 Ps’: people, prosperity, planet, partnership, and peace.⁴

The SDGs serve to measure the longer-term consequences of mine action interventions, since they allow the integration and assessment of most of the external dimensions that influence the results of mine action, including political, economic, social and cultural factors, and the performance of other related projects.⁵

Although the findings of this study are not meant to serve as an evaluation of the mine action activities conducted in BiH, they are an effective reference to highlight the value of connecting sustainable development, peace building and humanitarian activities as mutually reinforcing efforts across the full cycle of a mine action programme: from planning to monitoring and evaluation.

The BiH case study allows for the analysis of the results of mine action in the medium and long term, through an assessment of the contribution of land release, victim assistance, and explosive ordnance risk education. This research also takes into consideration the importance that gender mainstreaming efforts and the establishment of partnerships – within and beyond the mine action sector – have had regarding the overarching principle of ‘leaving no one behind’.

This research builds upon the following previous studies conducted by the GICHD, in close collaboration with key partners:

- *Leaving no one behind: Mine action and the Sustainable Development Goals* (2017).
- *The Socio-economic Impact of Anti-vehicle Mines in Angola* (2019).
- *The Sustainable Development Outcomes of Mine Action in Jordan* (2021).

The **Sustainable Development Outcomes of Mine Action in Jordan**⁶ constituted a first-of-its-kind study that comprehensively mapped the sustainable development outcomes of mine action activities and approaches in Jordan.⁷ The findings and lessons learnt from this pilot publication have served as the methodological source of inspiration for a series of new studies, including this one.

However, it is important to highlight that the specifics of the methodology here have been defined based on the particularities of the BiH context, considering relevant feedback obtained through a consultative process with key mine action stakeholders to ensure its relevance for the Bosnian context.⁸

Since mine action is inherently geographic,⁹ case study areas were selected to identify significant results in different parts of the country. Through a participatory process, the areas were selected according to: i) the timing of survey, clearance and release of land, ii) existing socio-economic factors that influence the potential results of mine action interventions, iii) which operator or national institution was in charge of the intervention, aiming to provide different organisational approaches and views, and iv) diversity in the results reported, looking at the three dimensions of sustainability: social, environmental, and economic.¹⁰

This selection of tasks was conducted in close coordination with the Bosnia and Herzegovina Mine Action Centre (BHMACE), its regional centres, and mine action operators.

In order to confirm the relevance of the proposed case study areas, the lead researcher conducted field visits and carried out observation in the preselected case study areas coupled with on-site semi-structured and unstructured interviews with key stakeholders. These efforts were combined with desk research and documentary analysis to cross-reference and expand primary information directly gathered in situ, in addition to remote structured and semi-structured interviews¹¹ with representatives from BHMACH, the mine victim assistance coordination body, Mines Advisory Group, and Norwegian People's Aid.

Concretely, primary data – from interviews and field observation – was cross-referenced with available statistics and various official reports and publications, including those provided by BHMACH and its regional centres in Tuzla, Brčko, Sarajevo and Pale. The analysis of cleared minefields using BHMACH documentation, maps and reports, was further complemented by satellite imagery analysis to illustrate the changes in development after the release of land.

This study supports BiH's interest to better understand the role of mine action in enabling development and the fulfillment of the SDGs by providing concrete evidence on the observed developmental outcomes in mine-affected areas.¹² This, in turn, could potentially contribute to awareness raising and resource mobilisation,¹³ which remain key priorities for the country. In fact, the National Mine Action Strategy 2018–2025 incorporates the 2030 Agenda by presenting it as one of the strategically important intersectoral issues (alongside gender and diversity). The Strategy also acknowledges the importance of switching from mere outputs to wider sustainable development outcomes.¹⁴

Similarly, mine action is referred to on various occasions in BiH's official documents related to sustainable development. The primary example is the document, The SDGs Framework in Bosnia and Herzegovina, adopted in 2020, which highlights the obstacles and the negative impact created by explosive ordnance contamination and includes demining as one of the drivers under the smart growth pathway.¹⁵ In addition, the Framework refers to BiH's plans to create an additional (18th) SDG 'Bosnia and Herzegovina mine free by 2030' in order to "emphasize the need to incorporate the issue of mine clearance in all development policies in the country."¹⁶

INTRODUCTION

CONTEXT

After the collapse of the Socialist Federal Republic of Yugoslavia, the Bosnian War from 1992–1995 resulted in over 200,000 deaths, mass displacement, and explosive ordnance contamination.¹⁷ The course of the war was extremely complex, with shifts in conflict locations and intensity of fighting, as well as widespread activity by local militias who conducted ethnic cleansing.¹⁸ The General Framework Agreement for Peace, also known as the Dayton Peace Agreement, marked the official end of the conflict and resulted in the establishment of its central government, composed of two entities, the Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS), and the Brčko District as a single administrative unit of local self-government existing under the sovereignty of BiH.¹⁹

Unlike other contemporary conflicts, the Bosnian war was characterised by relatively stable confrontation lines and was fought between three armies²⁰ with comparable training in mine warfare. Generally, they all employed similar mine-laying methods to the Yugoslav People's Army.²¹ Therefore, mines were primarily laid to protect front-line positions, but other uses were reported such as i) to protect or prevent access to transport infrastructure, ii) to protect strategic installations, iii) in support of ethnic cleansing,²² iv) to protect wartime prison camps, v) to destroy cultural or religious sites, and vi) to protect private property, among others.²³

Despite the end of armed conflict more than two decades ago, Bosnia and Herzegovina (BiH) is still contaminated by mines and explosive remnants of war (ERW) including cluster munition remnants. BiH is considered one of the most heavily-mined countries in Europe and contamination continues to have severe social, economic, and environmental impacts in the country today, including on post-conflict reconstruction and development. The most contaminated areas are located along the Inter-Entity Boundary Line²⁴ which is the zone of separation between BiH's two main political entities – the Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS).

Bosnia and Herzegovina is an upper middle-income country of around 3.5 million people.²⁵ Of critical importance, the population in BiH is shrinking and ageing. Out-migration is an urgent challenge, representing a loss of young people and skilled workers upon which future sustainable

development will depend: two million citizens of BiH are currently working or residing abroad²⁶ – the highest share in the Western Balkans²⁷ and projections suggest the population could decline below 2.3 million by 2100.²⁸

Accession to the European Union (EU) is an over-arching priority, and demining is a precondition for this. Despite a broad consensus for joining the EU,²⁹ a shared vision for the country has also been difficult to achieve due to decentralised and fragmented governance structures.^{30 31}

Administratively, BiH is comprised of the two entities (FBiH and RS) and the Brčko District of BiH as a self-governing unit that is jointly owned by the entities. FBiH is divided into 10 cantons, each subdivided into 79 municipalities and cities, while the RS is divided directly into 57 municipalities.³²

FIGURE 3 MAP OF BOSNIA AND HERZEGOVINA ENTITIES AND BRČKO DISTRICT



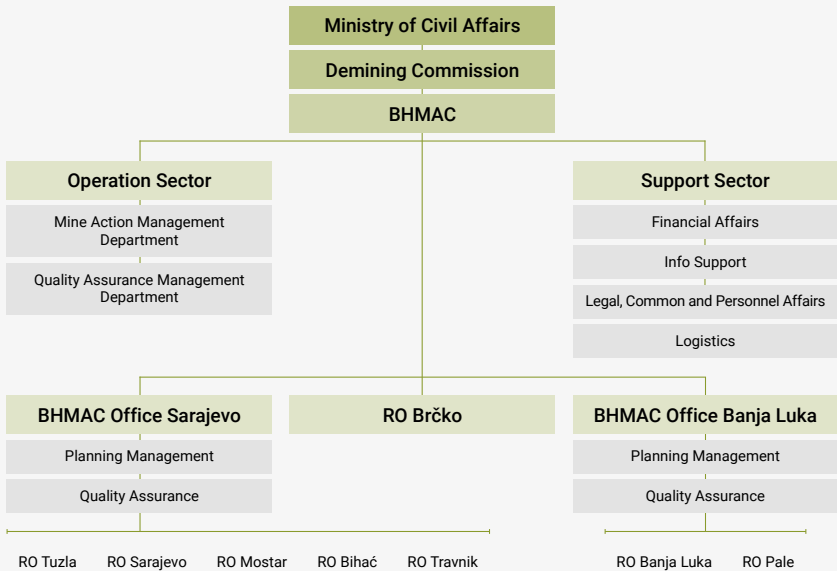
Each entity in BiH has its own constitution, with power in RS more centralised at the entity level, compared to FBiH where there is greater jurisdiction at the cantonal and municipality levels.³³ There are 14 constitutions and legal systems overall, as well as over 150 ministries. While the system in place addresses local concerns, it also inhibits policy coherence and delivery of effective public services.³⁴ In line with this, the pattern of government decentralisation also has implications on the mine action structures in place and the effective implementation of relevant policies.

There are two bodies responsible for mine action in BiH: the Demining Commission (DC) which acts as the strategic body, represents the sector internationally and sets mine action policies, and the Bosnia and Herzegovina Mine Action Centre (BHMIC), the technical body which is primarily responsible for operational aspects. Established within the Ministry of Civil Affairs, the DC is composed of representatives from three ministries (Civil Affairs, Defense, and Security) and supervises the work of BHMIC.³⁵

MINE ACTION IN BOSNIA AND HERZEGOVINA

Humanitarian mine action efforts in BiH officially started in 1996 just after the signing of the Dayton Peace Agreement by the entity armies under the supervision of the NATO-led Implementation Force (IFOR).³⁶ The United Nations Mine Action Centre (UNMAC) initially coordinated the local mine action structure and operations, before BHMIC was established in 1998 as a unified mine action centre on the state level that would take on the role and responsibilities of UNMAC. With its headquarters in Sarajevo, BHMIC's two entity offices (Sarajevo and Banja Luka) coordinate the eight regional offices with planning, survey, quality assurance, and quality control.³⁷

FIGURE 4 BHMAL ORGANISATIONAL CHART



Source: BHMAL, own elaboration

Under the guidance of BHMAL, the main national operators are the Armed Forces of BiH, the Civil Protection Administration of Republika Srpska, the Federal Administration of Civil Protection, in addition to several non-governmental organisations and commercial demining companies. Currently, the accredited international operators on the ground are Norwegian People’s Aid (NPA) and Mines Advisory Group.³⁸

BiH is a State Party to the Convention on the Prohibition of the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on their Destruction (APMBC), to the Convention on Cluster Munitions (CCM), to the

Convention on Certain Conventional Weapons and its Amended Protocols II-IV and V on Explosive Remnants of War,³⁹ as well as to the Convention on the Rights of Persons with Disabilities.⁴⁰

Completed in 2020, the EU-funded 'Country assessment of SHAs in Bosnia and Herzegovina' was initiated in July 2018 by BHMIC, the Armed Forces of BiH, and NPA with the strong support of EUFOR in BiH. With the support of local authorities, this assessment led to the established mine suspected areas (MSAs)⁴¹ subsequently undergoing the process of land release (non-technical survey, technical survey, clearance).⁴² Results from the assessment were used to inform BiH's request in 2020 to extend the APMBC Article 5 deadline by six years, to March 2027.⁴³ However, challenges persist in relation to understanding the full extent of the contamination, since contamination maps and records were often unreliable while other areas had never previously been mapped.⁴⁴

NATURE OF CONTAMINATION

Anti-personnel mine (APM) contamination is considered heavy in BiH, and the country is considered as one of the most heavily mined countries in Europe - contamination also includes ERW and CMR.⁴⁵

BHMIC categorises suspected hazardous areas (SHAs) based on priority levels, according to the extent of impact of mines on residents. Category I areas cover cases involving repatriation, demining of houses for return, reconstruction of settlements, health and educational facilities, agricultural land, industrial complexes, forests, and tourist and forest locations removed from inhabited areas. Category II covers land that is in occasional use or bordering category I, representing a safety belt through already dealt-with category I locations. Category III encompasses SHAs with consequences dating from the war, as these areas were located between the confrontation lines. They present the least possible risk given their more isolated locations, far from any prominent natural resources and lacking evident reasons for people to approach them.⁴⁶

Based on initial estimations from BiH and information from the warring factions after the war, the contaminated areas stretched over an area of 4,200 km² and consisted of 19,057 minefields. A general assessment conducted in 2015 found 1,369 communities to be affected by mines / ERW, involving 517,000 residents or 14% of the total population in BiH, and 60 communities contaminated by CMR. From the total number of communities affected, 18% or 111 of these communities fell within the high impact category.⁴⁷

Assessments conducted in January 2018 showed the SHAs in BiH to be a total of 1,061.32 km² which is 2.08% of the total area of the country. Following the country assessment of SHAs in BiH from 2018 to 2020 on 1,030 km² of suspected mined land, a total of 488 polygons of SHAs were identified⁴⁸ measuring 945,938,493 m² and 799 confirmed hazardous areas (CHA) measuring 20,747,593 m².⁴⁹

In 2020, 0.53 km² were cleared,⁵⁰ 2.57 km² reduced, and 13.04 km² cancelled. ⁵¹ A total of 1,342 APMs, 22 anti-vehicle mines, and 192 ERW / unexploded ordnance were destroyed.⁵²

There have been many challenges concerning updated mapping of mine contamination, as it has been reported that about 40% of minefield records were either not produced or not reliably passed on, with records lost, hidden, or destroyed. Reasons for this can include the death or emigration of those responsible for creating the records,⁵³ in addition to physical changes to the contaminated areas (i.e. due to flooding and other natural disasters). Nonetheless, mapping of the mine contamination reveals significant mine belts amassed along the Inter-Entity Boundary line between RS and FBiH.

A map of the initial mine contamination (2001) is shown on the left, compared to the more recent encapsulation of contamination (2021) on the right, with cleared areas marked in blue.

FIGURE 5 MAPS OF INITIAL AND CURRENT CONTAMINATION, 2001 AND 2021



Source: BHMAC

- **1995:** Signing of the Dayton Peace Accords.⁵⁴
- **1996:** Commencement of the mine action programme in BiH with the establishment of UNMAC.⁵⁵

Initiation of humanitarian mine action efforts in BiH by entity armies under the supervision of the NATO-led Implementation Force (IFOR).⁵⁶
- **1998:** Establishment of the Demining Commission comprised of entity centres for mine action (MAC RS and FED MAC) and a state-level coordination centre (BHMAC).⁵⁷
- **1999:** BiH becomes a State Party to the APMBC.⁵⁸
- **2002:** Adoption of the National Demining Law and the first National Mine Action Strategy 2002–2009.⁵⁹
- **2008:** BiH submits its first request for an extension to the deadline for completing the destruction of anti-personnel mines in mined areas, to 2019, in accordance with Article 5 of the APMBC.⁶⁰

Adoption of the second National Mine Action Strategy 2009–2019.⁶¹
- **2010:** Adoption of the Convention on the Rights of Persons with Disabilities and its Optional Protocol.⁶²

Adoption of the CCM.⁶³
- **2018:** BiH submits an interim request for a further extension to the deadline for completing the destruction of anti-personnel mines in mined areas in accordance with Article 5 of the APMBC.⁶⁴
- **2019:** Adoption of the third National Mine Action Strategy 2018–2025.⁶⁵
- **2020:** Completion of EU-funded country assessment of SHAs in Bosnia and Herzegovina.^{66 67 68}

**THE CONTRIBUTION
OF MINE ACTION TO
THE SDGs IN BOSNIA
AND HERZEGOVINA**



Demining team from Mines Advisory Group (MAG). Source: MAG

1. LAND RELEASE

FIGURE 7

CONTRIBUTION OF LAND RELEASE TO THE SDG TARGETS IN BIH



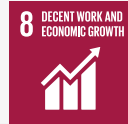
- 1.4** Equal rights to economic resources and access to basic services
- 1.5** Improved resilience, reduced vulnerability



- 2.1** Access to food
- 2.3** Doubling of the agricultural productivity
- 2.4** Sustainable food production



- 6.3** Improved water quality
- 6.4** Increased water-use efficiency
- 6.6** Protection and restoration of water-related ecosystems



- 8.1** Sustained economic growth
- 8.2** Increased economic productivity through diversification
- 8.3** Support for productive activities and decent job creation
- 8.4** Improved resource efficiency in consumption and production
- 8.5** Full and productive employment and decent work
- 8.8** Ensuring safe and secure working environments for all workers
- 8.9** Promotion of sustainable tourism



- 9.1** Equitable access to infrastructure
- 9.2** Inclusive, sustainable industrialisation
- 9.3** Increased access of small-scale enterprises to financial services



- 10.7** Safe migration and mobility



-
- 11.1** Access to adequate, safe and affordable housing
 - 11.3** Inclusive and sustainable urbanization
 - 11.5** Reducing the number of deaths, people affected, and economic losses relative to global GDP caused by disasters
 - 11.b** Implementing integrated plans towards adaptation to climate change and resilience to disasters



-
- 15.1** Restoration and conservation of terrestrial and inland freshwater ecosystems
 - 15.2** Promote implementation of the sustainable management of all types of forests
 - 15.3** Restoration of degraded land and soil
 - 15.5** Reduce the degradation of natural habitats, halt the loss of biodiversity, and prevent the extinction of threatened species



-
- 12.2** Sustainable management and efficient use of natural resources



-
- 16.1** Reduction of all forms of violence
 - 16.6** Development of accountable institutions
 - 16.7** Inclusive, participatory, representative decision-making
 - 16.10** Access to information and protection of fundamental freedoms



-
- 13.1** Strengthening resilience and adaptive capacity to climate-related hazards and natural disasters



-
- 17.16** Enhanced global partnership for sustainable development
 - 17.17** Effective public, public-private and civil society partnerships

The wording of the SDG targets listed above has been simplified; the full list of targets and their official names can be found on the United Nations website: <https://www.un.org/sustainabledevelopment/>

Land release refers to the process of applying ‘all reasonable effort’⁶⁹ to identify, define, and remove all presence and suspicion of explosive ordnance (EO)⁷⁰ through non-technical survey (NTS), technical survey (TS) and / or clearance.⁷¹

Land release removes physical blockages in order to safely access land for productive use and sustaining livelihood. Its enabling capacities are therefore critical to the economic development of a country, as showcased by the findings in this section. By reducing casualties caused by EO, mine action most directly links to **SDG 16** and its **target 16.1** which aims to “Significantly reduce all forms of violence and related death rates everywhere.”

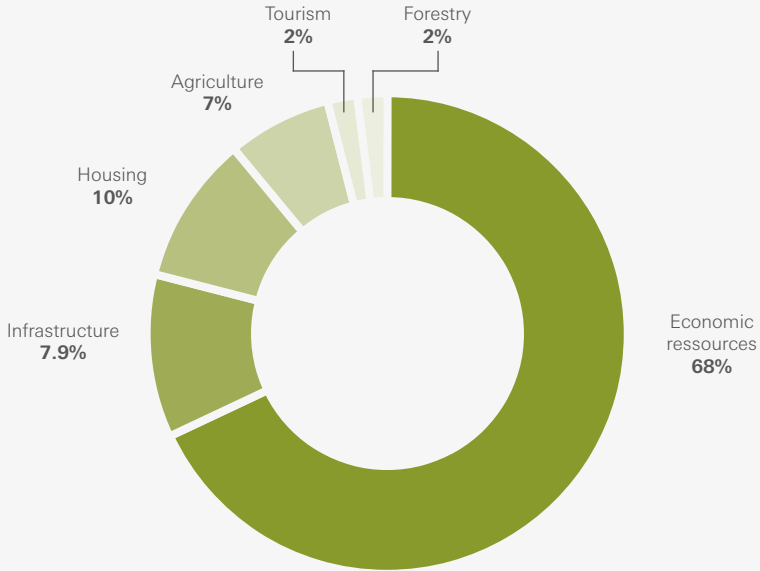
Through the implementation of TS and NTS techniques, the land release process increases efficiency of clearance by identifying and focusing on the hazardous areas. In Bosnia and Herzegovina (BiH), the land is grouped into suspected hazardous areas (SHAs) and mine suspected areas (MSAs). An MSA describes the wider area defining the land release process, including both SHAs and confirmed hazardous areas, and can include one or more mine-affected communities.⁷²

In the aftermath of the conflict, land release has been critical to socio-economic growth in the country. Ensuring safe access to critical resources allows for productive use of the land, increasing its capacity for cultivation and production value. Land release is consequently essential to supporting the development and reconstruction of community infrastructure, which has broader implications on social and economic development growth factors including decent employment, trade, tourism, and the safety and well-being of individuals. Removal of mines and explosive devices is a precondition for the rebuilding and development of affordable housing and transport infrastructure in both rural and urban areas.

According to the latest information available, a significant percentage of SHAs are intended to be used for agricultural purposes (174,269,208 m² or 19%), and second to forestry (641,524,712 m² of land or 70% of SHAs). This is followed by infrastructure (2%), water resources (1%) and other usages.^{73 74}

FIGURE 8

USE OF REDUCED AND CLEARED AREAS IN THE PERIOD 2018–2019



Source: Mine Action Review, Clearing the Mines 2020, own elaboration

This section will address the ways in which land release has contributed to sustainable development by means of enabling housing reconstruction efforts, flood prevention measures, access to natural resources – including water and forests, agricultural growth, and productive use of land, facilitating safe mobility, sustainable economic growth and infrastructure, and tourism.

The geographical areas visited for the study are listed in Figure 9.

FIGURE 9 SELECTED CASE STUDY AREAS

	CANTON	MUNICIPALITY	COMMUNITY / VILLAGE
FBiH	Tuzla	Gradačac	Avramovina
		Kalesija	Tojšići
		Lukavac	Orahovica
	Posavina	Odžak	Donji Svilaj - Novi Grad
		Domaljevac- Šamac	Grebnice
	Sarajevo	Novi Grad Sarajevo	Žuč
		Vogošća	Ugorsko
	Zenica-Doboj	Zavidovići	Debelo Brdo Novo Naselje
	RS		Pale
District Brčko			Ulice
			Dubrave
			Grbavica

HOUSING RECONSTRUCTION EFFORTS

By the end of the conflict in 1995, an estimated 412,000 housing units were partially or completely destroyed which corresponds to thirty-seven percent of pre-war housing stock,⁷⁵ more than one million people were displaced and were forced to relocate to collective centres or to occupy the homes of other displaced people based on ethnic identity.⁷⁶ Mine clearance has been linked to the process of rebuilding and repairing housing in post-conflict areas where refugees and internally displaced persons (IDPs) are to return, supporting reconstruction and resettlement processes.⁷⁷ More than two million fled their homes over the course of the war.⁷⁸ The number of returnees however was lower than expected, with an estimation that 60,000 of the refugees who left during the conflict returned in 1996, 38,000 returned in the first half of 1997, and 800,000 were still outside BiH as of 2000.⁷⁹ By July 2004, a total of 1,000,473 people (440,147 former refugees and 560,326 internally displaced persons) had returned to their homes. Of this total, 446,795 of the returnees were minority returns.^{80 81}

The Dayton Peace Agreement (DPA) ending the war included minority return, the reversal of ethnic cleansing, and granted the right of refugees and IDPs to return. Since inadequate housing was seen as a major deterrent to the return of refugees and IDPs, most of the projects were focused on the repair and reconstruction of housing and engineering, rather than on socio-economic components including ownership.

Moreover, funding from donors dedicated to housing was often awarded to foreign non-governmental organisations and local companies with no housing construction experience, and there were no needs assessments for the potential beneficiary communities of the reconstructed housing (i.e. to take into consideration their pre-war life, current livelihoods, lack of employment opportunities, access to health and education, ethnicity-based discrimination, and security concerns). A reflection of this can be seen in the high number of reconstructed properties that were reported to still be empty, and had been since 1996. A distinction was not made between genuine needs for reconstruction for those without housing, and people

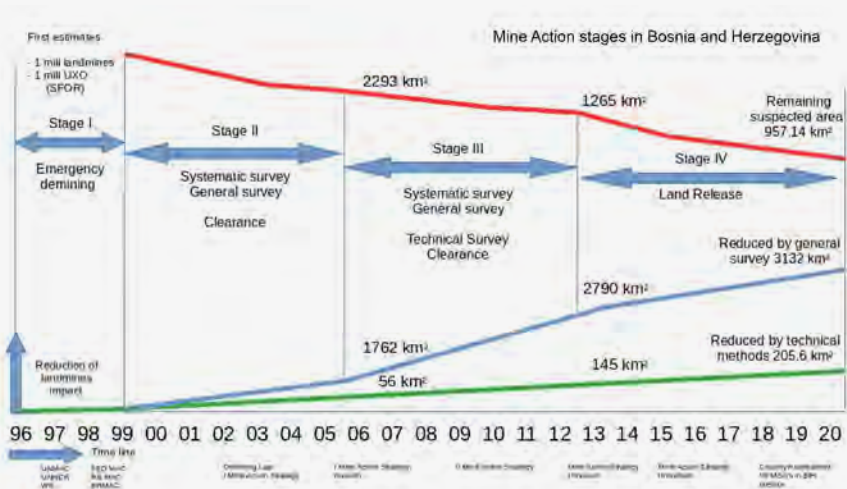
who did not intend to return. This gap in knowledge has been attributed in part to the lack of coordination between donors, implementing actors, and local authorities.⁸²

While mine clearance was essential for housing reconstruction, these efforts did not lead to significant minority returns due to different underlying factors, including ethnic power dynamics.⁸³ Whilst assessing these, it is important to consider that housing was not wantonly destroyed but carefully targeted: eliminating housing belonging to 'the other' was key to successful ethnic cleansing,⁸⁴ and hence there is a highly complex ethnic dimension that relates to the success or failure in the efforts to promote the safe return of IDPs and refugees to rehabilitated infrastructure, as per the DPA. While there are valid concerns about the relevance of reconstruction for promoting safe return, the critical importance of the housing projects, in terms of the immediate need for rebuilding lost assets, is obvious.⁸⁵

The World Bank's assessment serves to confirm that little information was available during its involvement in the BiH reconstruction programme, particularly regarding the landmine situation in general and in reconstruction of priority sites. What was available came in the form of hand-drawn maps which were not able to be used at the time as they were passed to the NATO-led Implementation Force by the three armies in the demilitarisation process. While local armies carried out mine clearance under the Dayton Agreement framework, the local capacity, including institutional structures and local companies, was limited to define a mine action strategy.⁸⁶

Mines were mainly laid to protect front-line positions, but these were also used to prevent the return of minority inhabitants and house rebuilding, and to protect private property,⁸⁷ hence resulting in high levels of contamination surrounding residential areas and preventing safe access for reconstruction. For this reason, demining for reconstruction of housing objects and facilities and the restoration of essential public services was considered as a first category priority by BHMIC Standard Operational Procedures (SOPs).⁸⁸

FIGURE 10 STAGES OF MINE ACTION 1996–2020



Implementing agents involved in the early days of reconstruction include the Norwegian People’s Aid (NPA) Reconstruction Programme which initially focused on the Tuzla area, but then shifted to the Sarajevo Canton from 1998 to 2003.⁸⁹ In addition to clearing infrastructure projects and cultural heritage monuments, it also entailed clearing damaged houses and apartments as part of refugee settlement programmes there. Its initial programme was aimed at supporting the shelter and development programmes by clearing areas in which NPA was reconstructing housing and initiating community development efforts.⁹⁰

Land release has thus facilitated the reconstruction and expansion of housing and residential areas for returnees and has furthered urbanisation. In this context, there are linkages between mine action and **SDG 9** Industry, innovation and infrastructure, and its **target 9.1** on developing infrastructure, to support economic development and human well-being, and **target 9.2** on promoting inclusive and sustainable industrialisation

and raising the industrial share of employment and gross domestic product (GDP). As a prerequisite to housing reconstruction efforts after the war, land release is a direct contributor to **SDG 11** Sustainable cities and communities, and its **target 11.1** on ensuring access to safe and affordable housing, and **target 11.3** on enhancing sustainable urbanisation.

FLOOD PREVENTION

Given the geological characteristics of BiH, it is vulnerable to various natural disasters such as floods, earthquakes, landslides, storms, droughts, and wildfires. In the period 1999–2014, floods were a frequent occurrence and were shown to have been the cause of the highest economic losses (63%), followed by drought (36%).⁹¹

The floods are most often due to the overflow of rivers. There are a total of seven river basins in BiH: the Una, Vrabas, Bosna, Drina, Sava, and the Neretva with Trebišnjica and Cetina. The Sava River runs along the border with Croatia and Serbia, and about 75% of BiH is located in the river basin of this area.⁹²

Most recently, in November 2021, flooding resulted in evacuations from homes in the Sarajevo suburbs along the Bosna, Tilava and Željeznica rivers and in the town of Konjic in the south-west. Power outages occurred throughout the city of Sarajevo, along with submersion of roads, school closures, and the closure of an essential oxygen facility used for Covid-19 patients during a surge in cases.⁹³

Heavy precipitation led to devastating flooding in the Sava River Basin on May 14–19, 2014 resulting in high water levels in the Bosna, Sava, and Vrbas rivers and their tributaries in northern, eastern and central parts of BiH with a record-breaking amount of over 250 litres of rain per m². This resulted in over 2,000 landslides across the country and the evacuation of about 40,000 people.⁹⁴ The total damage and loss as a result of the flood was estimated to be over two billion EUR, equivalent to 15% of the country's GDP in 2014 (1.04 billion EUR in Federation of BiH (FBiH), 0.97 billion EUR in Republika Srpska (RS), and 0.30 billion EUR in Brčko District).⁹⁵

One of the reasons for the flooding was damaged flood control facilities and contamination as a result of the Bosnian War, inoperable or inaccessible water drainage infrastructure, as well as the lack of regular maintenance of existent flood protection infrastructure, especially along the Sava. Additional reasons for inundation and flooding after heavy rains include environmental degradation (such as deforestation and intrusion of floodplains) as well as construction in flood-prone areas.⁹⁶

After the 2014 flood, a recovery needs assessment initiated by the BiH governments with the support of the Global Facility for Disaster Reduction and Recovery, the World Bank, the European Union (EU) and UN Development Programme (UNDP) informed a post-disaster recovery plan for the country.⁹⁷ As indicated by the findings in the report, such natural disasters reveal reconstruction and infrastructural needs. As such, disaster risk reduction is being introduced into the country's strategy for resilience and sustainable development.⁹⁸

According to this assessment, a major safety hazard to implementing recovery efforts was related to the fact that landmines contaminated over 70% of the flood-affected zone.⁹⁹ The dangers associated with the presence of landmines and unearthed unexploded ordnance (UXO), carried by flood streams, uncovered due to erosion, or covered by layers of mud especially during landslides as well as warning signs that had been removed, were identified as critical safety issues. A total of 105 km² were identified as potentially containing landmines and UXO as a result of flooding. The Posavina and Brčko regions were heavily hit by the flooding and residents reported a high number of mines and UXO around houses and in the surrounding areas.¹⁰⁰

In addition to taking preventative measures related to removing landmines after flooding, the ability to then be able to safely access cleared land is crucial to increasing resilience against future flooding and further damage. This can be made possible via integrated watershed management and control, integrated early warning systems, stabilisation of slopes, and enhanced protection of areas vulnerable to landslides.¹⁰¹

The crisis resulted in the destruction of residential buildings and severe damage to industrial buildings and public institutions such as health centres and schools. United Nations Children's Fund (UNICEF) identified 74 municipalities whose educational institutions were affected by flooding. Out of an estimated 320,000 people affected, 60,000 were children aged 0-18 with 16,000 of these aged 0-5. Additional infrastructure affected by the flooding included critical access points such as main roads, as well as side roads and bridges.¹⁰²

The agricultural sector and crop production also suffered major damage in the aftermath of the flooding, with losses estimated at 140 million EUR.¹⁰³ The risk of flooding poses a great threat to future food security and livelihoods as it is one of the most important sectors of the economy. The 2014 flood significantly destroyed farm buildings, equipment, supplies (i.e. hay and silage) and crops, while livestock was placed at risk. The flooded area encompassed 17% of the total planted area in affected municipalities.¹⁰⁴

Enabling flood prevention is crucial to community resilience, and preventing further damage and environmental degradation as a result of heavy rain and flooding in the future. After the 2014 flooding in BiH, erosion of the riverbanks left them weaker and at greater risk of further erosion. Other risks in the affected locations include increased risk of local mudslides, road and railway line damage, bridge and tunnel damage, and accidental pollution.¹⁰⁵ For example, pollution from the Sava River reached protected retention areas in Lonjsko Polje in 2014.¹⁰⁶ Decreased water quality due to flooding can also be attributed to erosion and sewer overflow. Improved management of storm water through flood prevention mechanisms therefore has implications for public health, food security, economic growth, and the environment.¹⁰⁷

In Donji Svilaj and Novi Grad (FBiH) along the border with Croatia, mine contamination along the Sava River and very close to the road hindered flood protection and safe mobility. Contamination also presented an obstacle to accessing the land for the purpose of undergoing flood prevention measures. Several drainage channels pass through the surface of this MSA, and their rehabilitation is extremely important to prevent future floods in the area. Thanks to clearance, these channels could be accessed

and construction of the north-south transport Corridor Vc also became possible. This is the first major motorway in BiH which connects with Croatia and which serves as a flood protection barrier as well.¹⁰⁸

FIGURE 11 SATELLITE IMAGES OF DONJI SVILAJ AND NOVI GRAD IN 2007 AND 2021, WITH POLYGONS INDICATING PREVIOUSLY CONTAMINATED AREAS.¹⁰⁹



Source: Google Earth

Prior to land release, minimal agricultural activity was present. By 2021, flood protection was in place following land release. Increased land use in the surrounding area is evident, with some areas remaining mainly forested and others converted and developed for agricultural purposes, as well as the construction of the Corridor Vc.

Water drainage channels along the margins of the river were also cleaned and repaired in the municipalities of Grbavica and Grebnice to serve as a protective measure in case of flooding.¹¹⁰ The ability to access, operate, and rebuild water drainage infrastructure is essential, as communities can suffer serious flooding when this is not possible, as was the case in Orahovica among other localities.¹¹¹ As already discussed, land release improves the capacity to prevent risks and respond to natural disasters.

By enabling flood prevention and infrastructure projects which improve the ability to store and move water, land release protects communities from risks to their health, safety, and livelihood. By unblocking access, land release has contributed to **SDG 11** Sustainable cities and communities, and in particular, it links to its **target 11.5** on significantly reducing the number of deaths and number of people affected as well as decreasing the direct economic losses relative to global GDP caused by disasters, including water-related disasters. It links as well to its **target 11.b** on implementing integrated plans towards adaptation to climate change and resilience to disasters.

By assuring safe access for flood prevention projects to occur, land release also contributes to **SDG 6** Clean water and sanitation. Enabling the installation of flood prevention mechanisms can further protect against water contamination from critical facilities containing hazardous materials like industrial or waste facilities, linking to **target 6.3** on improving water quality by reducing pollution, eliminating dumping and minimising the release of hazardous chemicals and materials.

The ability to properly ensure protective measures against the erosion of riverbanks and environmental damage of surrounding agricultural and forest areas links to **target 6.6** on protecting and restoring water-related ecosystems. As previously shown in the satellite images, this supports the cultivation of agricultural lands and protects against further destruction

of crops, livestock, and supplies as a result of flooding. This links to **SDG 2** Zero hunger, particularly its **target 2.4** on ensuring sustainable food production systems and implementing resilient agricultural practices that help maintain ecosystems and strengthen capacity for adaptation to climate change, extreme weather, flooding, among other disasters, and that progressively improve land and soil quality.

ACCESS TO NATURAL RESOURCES

WATER

As a key activity in BiH, agricultural processes are dependent on proper water management.¹¹² The rehabilitation of water sources is therefore critical, with demining as a precursor to this.

BiH has four water agencies, two in FBiH and two in RS,¹¹³ established by the Ministry of Agriculture, Forestry and Water Management. They are responsible for the implementation of water sector development plans related to a range of issues, among them protection from flooding, as well as maintenance of independent regional water supply systems that link to the municipal network.¹¹⁴

In Debelo Brdo, a major impact of land release was access to water supply, alongside agricultural land use expansion and links to local businesses. A water source / pump was previously inaccessible due to its location in the MSA. With NPA operations starting in 2019, at least five families were able to have access to water six months after the land was released. The clearance resulted in the economic sufficiency of the surrounding communities as well, with 300 people directly using the land for various agricultural purposes including the cultivation of blackberries and accessing the forests for wood collection.

Regarding the efficient use of natural resources upon safe access, land release has contributed to **SDG 12** Responsible consumption and production, and its **target 12.2** on the sustainable management of natural resources, as well as to **SDG 6** Clean water and sanitation, and its **target 6.4** on increased water-use efficiency.

This contributes to **SDG 15** Life on land, particularly to **target 15.1** on ensuring conservation, restoration and the sustainable use of terrestrial ecosystems as well as **target 15.3** on restoring degraded land and soil affected by desertification, drought, and floods.

FORESTS

BiH contains 4.7 million ha of forested land (92% of its total area), the largest area of forests and variety of forest species in the Western Balkans.¹¹⁵ Forests are a critical source of livelihood in the country, contributing to both economic and social development.¹¹⁶

Safe access to land significantly impacts the condition of the woods and forests and has an important economic impact on those whose income depends on the collection of firewood or hunting. The economic importance of forests is also linked to rural poverty, with predominantly poor populations in these low-income areas increasingly relying on their use.¹¹⁷

The overall sense of security felt in being able to make use of the woods further impacts all aspects of the lives of individuals as well as communities, as reported by a hunter in Grbavica. Prior to clearance of EO, he did not dare to go on the land and acknowledged the stark difference in being able to freely walk his dogs without fear today, and the peace of mind felt that children, in particular, are safe to go into the woods as well.¹¹⁸

Furthermore, the blockage of forest paths and the inability of firefighters to safely access areas due to the presence of mines has led to significant environmental damage as a result of forest fires each year. For instance, mines were set off while putting out wildfires a few years ago in the village of Slivnica.¹¹⁹

Areas which are still contaminated are subject to non-management and rewilding.¹²⁰ When it comes to abandoned and unmanaged forests, despite the increased biomass produced upon reforestation, the timber they yield is of reduced quality and the growth of pioneer species or shrubs can have a negative impact on the health of the forest.¹²¹ In addition to forest health problems, the presence of mines has been linked to reduced mobilisation of timber.¹²² These factors do not support the economic potential of these regions and the development of high value chains for forest goods and services.¹²³

Freeing the land from mines in forested areas therefore has social, economic, and environmental dimensions. It is essential for sustainable forest management to occur, helping to reduce the effects of climate change and promoting the quality of forest health in the long term. It further preserves natural habitats by preventing forest fires, which also serves to safeguard people in surrounding areas as well as endangered species.

The ability to manage forests as a result of land release has contributed to **SDG 12** Responsible consumption and production, particularly its **target 12.2** on achieving the sustainable management and efficient use of natural resources. It also promotes **SDG 13** Climate action and its **target 13.1** on strengthening resilience and adaptive capacity to climate-related hazards and natural disasters like forest fires, and **SDG 15** Life on land, and its **target 15.1** on ensuring conservation, restoration and sustainable use of terrestrial ecosystems, **target 15.2** towards promoting the implementation of sustainable management of all types of forests and **target 15.5** on taking action to reduce the degradation of natural habitats, halt the loss of biodiversity and protect and prevent the extinction of threatened species.

The ability to access and manage cleared forests also has major economic impacts and contributes to reducing rural poverty and promoting livelihoods. By unblocking forest-related natural resources, land release contributed to **SDG 1** No poverty, and its **target 1.4** on ensuring access to economic resources and **target 1.5** on building the resilience of the poor and those in vulnerable situations by reducing their exposure to climate-related extreme events and environmental shocks and disasters. By allowing

the use of forests to secure livelihoods under safe conditions, land release contributes to **SDG 8** Decent work and economic growth, and its **target 8.8** on ensuring safe and secure working environments for all.



Deminer from NPA with mine detection dog conducting mine clearance operations. Source: GICHD and Johannes Müller

AGRICULTURAL ACTIVITIES AND PRODUCTIVE USE OF LAND

The agricultural sector plays a crucial role in the BiH economy, contributing to 6% of the country's GDP.¹²⁴ Agriculture contributes to food security for a large sector of the population and generates income and employment opportunities. In fact, more than half of the population (51.8%) live in rural areas and depend on agriculture as their source of livelihood. An estimated 20.5% is employed in the agricultural sector, with women comprising 56% of this total.¹²⁵

As a largely forested and mountainous country, the agricultural sector in BiH is characterised by subsistence and semi-subsistence farming and is dominated by small-scale, family-owned farms with low production capacity.¹²⁶ Insufficient production of crops has been attributed to the inability to make use of agricultural land,¹²⁷ in addition to environmental and climate-related challenges (e.g. flooding and droughts) as mentioned in the section above. According to the Food and Agriculture Organization of the United Nations (FAO), of a total 2.2 million ha of agricultural land in BiH, 1.6 million ha is arable and 600,000 ha is pastureland.¹²⁸ The average size of agricultural holdings in FBiH for instance is about 1.6 ha, smaller than the EU average of about 16.1 ha, and only 1,612.5 ha (0.2 % of arable land) in the entity are irrigated.¹²⁹ Low productivity and competitiveness are seen across all branches of agricultural production, resulting in a foreign trade deficit in the sector.¹³⁰

Developments in the agricultural sector as a result of land release in BiH can lead to increased market opportunities, which not only impact livelihoods and improve economic opportunities in rural areas, but also increase the country's eligibility for accession to the EU. BiH has already received EU support for development projects in the agricultural sector, through funding under the Instrument for Pre-Accession Assistance. One such project is the European Union Support to Agriculture Competitiveness and Rural Development in Bosnia and Herzegovina (EU4AGRI), a four-year project (2020–2024) with the goal of revitalising the agri-food sector, creating new jobs, and supporting recovery through increasing investment in the sector as well as knowledge and skills of producers. It is implemented and co-funded by UNDP and the Czech Development Agency.¹³¹

Furthermore, the country adopted a Strategic Plan for Rural Development of Bosnia and Herzegovina (2018–2021) and an Economic Reform Programme (2019–2021), both of which were geared towards restructuring the agricultural sector and establishing a system that aligns with EU membership requirements.^{132 133}

The terrain in BiH is diverse, ranging from lowland river valleys to hilly and mountainous regions, each with its own variety of crops grown.¹³⁴ Agricultural production in BiH relies mainly on crop production, with livestock production contributing to less than one third of the total

provision.¹³⁵ Beekeeping is a significant business in BiH, providing between 8,000 and 10,000 jobs. In 2018, honey production was 3,992 tonnes from 403,000 beehives.¹³⁶ Depending on the year, the production of honey ranges from 2.5 to 5 million kg annually. According to the BiH Strategic Plan for Rural Development (2018–2021)¹³⁷ honey production has become an additional source of income for rural households. With the increasing price of honey and low investment required, beekeeping is an accessible source of income as it is adaptable to the given financial resources and physical or spatial capacities.¹³⁸

Residents of urban areas are not as affected economically and socially as those in rural communities, where access to contaminated land is integral to economic growth and development. In these regions, many farmers still choose to utilise the land even though they are considered suspected hazardous areas. Data collection on mine / explosive remnants of war victims has shown that socio-economic status, age, and gender are also determining risk factors for exposure. It further revealed the seasonal nature of incidents which occur mostly in autumn and spring during agricultural work, and during the collection of firewood and raw materials that have economic value.¹³⁹

In the local community of Avramovina (Tuzla Canton, FBiH) where everything burned down during the conflict, a mine belt divided the town and no community infrastructure remained. After the end of the war in 1995, NTS, TS and clearance were conducted in the vicinity of the houses. However, 90% of military records were removed and the remaining information was not considered fully reliable.¹⁴⁰

From 2005–2016, clearance was carried out in Avramovina by the Armed Forces of BiH, the NGO DEMIRA, and the international operator NPA. A total of 300 square metres were cleared and residents were able to confidently return and invest in the land, increasing its production value. Since then, community infrastructure has been rebuilt and people have returned to cultivating the land which has led to the establishment of small farms where the production of crops (including corn, wheat, plums, and apples) has become a source of livelihood, as has the ability to raise cattle.¹⁴¹ This illustrates the significant security and economic impacts of land release conducted in a micro location.

As observed in Figure 12, there was no apparent use of land prior to clearance (2007), but after land release, fields are dedicated to agricultural activities and the growing of different fruit trees (2019).

FIGURE 12 SATELLITE IMAGES OF AVRAMOVINA, 2007 AND 2019



Source: Google Earth

While agricultural use of land after clearance is usually immediate, it takes 5–7 years on average for communities to return.¹⁴² The second image illustrates the impact on agriculture and the productive use of land after land release, including the development of new agricultural projects, access to arable land and nutrient-rich soil, and support to a range of local small businesses that rely on access to natural resources, which in turn increases employment opportunities.

Transparency through mine action is crucial for residents to be able to confidently invest in the land after its release, raise more livestock, and increase overall farming capacity and production value. The Brčko Regional Director emphasised the importance of visibility and trust in the mine action process among communities.¹⁴³

Operators also reported strong cooperation with local communities in the land release process in BiH. In the initial phase of the process, NPA firstly cooperates with local authorities in order to establish a positive atmosphere to ensure the successful implementation of planned actions. During implementation of explosive ordnance risk education activities, NPA places a strong emphasis on the involvement of local government representatives in the process, due to their potential for instilling trust in the local population. Representatives of civil protection and other municipal departments often visit households with NPA teams, organise meetings, and hold presentations for vulnerable groups. Together with local community representatives, they are also active participants in the final phase of land release during the official handover of released areas. NPA also reports generating interest and involvement in the land release process through data collection, storage of equipment and tools (e.g. wooden stakes, mine clearance machines) as well as through hiring local liaison officers within the communities.¹⁴⁴

Similarly, Mines Advisory Group (MAG) applies a community-based approach through community liaison activities including meetings with local authorities, local associations and groups as well as identification of local key informants to support the land release process. MAG has an inclusive approach, working closely with survivors who play an active role in community liaison teams. By providing crucial information about the risks inherent to the contamination within their communities, their

knowledge supports mine action efforts and continues to challenge regular misconceptions regarding the danger of landmines 25 years after the war ended.¹⁴⁵

In Tuzla, the most populated canton and one that has been most affected due to the longest confrontation lines, close cooperation with local communities through regular meetings was considered essential by the local authorities. In fact, this region has seen a reduction in accidents in the past 10 years, with no accidents involving civilians using SHAs. Accidents have only taken place in marked areas where people were aware of the risk, usually hunters.¹⁴⁶

In this agricultural context, mine action operations at the local level contribute to **SDG 16** on promoting peaceful and inclusive societies for sustainable development, and in particular its **target 16.6** on building effective, accountable, and inclusive institutions at all levels, **target 16.7** on ensuring participatory and representative decision making at all levels, and **target 16.10** on ensuring public access to information.

THE CASE OF ULICE

Situated in the Brčko District, Ulice was strategically important during the war as it directly connects the Brčko District with the RS entity and, as a result, was where many battles were fought. Mines were laid in the forest and along roads, and it was completely abandoned after the conflict since its communal infrastructure had been destroyed. Land release operations in the area, carried out by NPA, started in 2004 and finished in 2007.

Given that the area lacked infrastructure at the time, the majority of the houses were damaged by fighting. Following the end of clearance operations in 2007, the lives of returnees have significantly improved. Roads were established right after clearance, including the road between Brčko and Grbavica which was heavily contaminated, due to its position as an important crossroads linking five villages. After clearance, a livestock farm was established along this road facing an expanse of agricultural fields.

FIGURE 13 SATELLITE IMAGES OF ULICE, 2006 AND 2021



Source: Google Earth

Taken after a 15-year period, the satellite image on the right shows the farm and road which were constructed after land release.

Small family businesses grew as a result, including a newly built pig farm in Vitanovići, which employs several families from the local area. The farm produces 10,000 pigs per year and utilises organic and animal waste as fuel and energy. Moreover, the safe land was rendered fertile and suitable for agricultural production (i.e. soya, corn, wheat, and sunflowers), for firewood collection, and hunting activities.

The rehabilitation of community infrastructure, such as asphalt roads and electricity power lines, was possible. For instance, a power line was built between Ulice and neighbouring Vitanovići and a local road was repaired. This project directly affected more than 420 people living on or near released land in the communities of Rogozan, Ulice, Vitanovići, Bukovac, and Lukići who are employed in house restoration, agricultural production, farming, firewood collection, and hunting. It also impacted about 5,500 people from communities adjacent to these settlements who use the forest roads and trails to travel across the released areas.¹⁴⁷ With its strategic and historic significance, this particular case of a heavily mined area presents a clear example of the multilayered impact of land release on environmental, social, and economic growth and sustainability.

As shown above, land release has been a direct contributor to **SDG 2** Zero hunger, and its **target 2.1** on ending hunger and ensuring access to safe, nutritious and sufficient food, **target 2.3** on agricultural productivity and incomes of small-scale food producers, family farmers and herders, as well as securing access to land, and **target 2.4** on sustainable food production systems that increase productivity.

The development of new agricultural projects and support for small-scale farmers has promoted **SDG 8** Decent work and economic growth, and its **target 8.2** on economic productivity through technological upgrading and diversification and **target 8.5** on productive employment.

FACILITATING SAFE MOBILITY

BiH receives an influx of migrants¹⁴⁸ each year, with International Organization for Migration (IOM) data reporting the population of international migrants in BiH to be 36,000 as of 2020, or 1.1% of the total population.¹⁴⁹ Increased blockades by border police in surrounding countries led to a rerouting of the Balkan Route during the mass migration of 2017–2018. This resulted in an increased flow of migrants into BiH, entering the country either from Greece through Albania and Montenegro, or from Serbia.¹⁵⁰ Authorities in BiH recorded a total of 24,067 migrants

in 2018,¹⁵¹ a significant increase compared to 755 in 2017, with the vast majority transiting from the Asian continent and North African countries including from Syria, Iraq, Turkey, Algeria, and Afghanistan. .^{152 153}

Risk areas for migrants include the mountains of Plješevica, Trebinje, Foča, Gacko, Višegrad and Goražde, located along the border in the north-west and south-east regions, since these have not yet been demined.¹⁵⁴ Bihać was also identified as a particular risk area, as it is the part of BiH where migrants try to exit the country and where most of the migrant population is concentrated.¹⁵⁵ The BiH Border Police noted that an increase in migrants in this north-eastern region coincided with decreased water levels of the Drina River in early spring.¹⁵⁶

FIGURE 14 MAPS SHOWING CONTAMINATION ALONG THE NORTH-WEST BORDER REGION



Bihać



Velika Kladuša



Cazin

Source: BHMACH

Although these sites are regularly visited by BHMACH for sign maintenance, migrants also move along border areas at night in order to avoid the police, exposing them to increased EO accident risks despite the explosive ordnance risk education (EORE) measures in place. Their movement is often through forested areas as well as former demarcation lines and they are unable to see warning signs displayed along roads and in key places.¹⁵⁷

Land release in the context of migration extends beyond ensuring the safe movement of migrants throughout contaminated areas, but is also of great importance in enabling the delivery of adequate facilities to migrants in difficult conditions. The IOM has reported significant challenges in terms of limited facilities for accommodating migrants including shelter, basic medical aid, power supply, and water.^{158 159} Closures of reception facilities in 2020¹⁶⁰ resulted in a significant reduction in the availability of beds, with more than 2,700 migrants left unaccounted for and weathering harsh winter conditions throughout the country.¹⁶¹ For instance, the temperatures in Bihać at night drop as low as –13 degrees Celsius, and many refugees have frozen to death.¹⁶²

While the lack of preparedness and limited infrastructure for the significant influx of migrants is linked to the political resistance to establishing reception centres,¹⁶³ the presence of mines in these regions is an additional major logistical impediment to the delivery of goods and services, and the installation of proper water and power infrastructure. It further presents a risk to the safe mobility of personnel from medical and international organisations, and NGO bodies working on various issues involving the rights, well-being, and education of migrants in these regions. MRE for professional staff is therefore essential in order to maximise their capacity in these regions.¹⁶⁴

By facilitating safe mobility, mine action has contributed to **SDG 10** Reduced inequalities, and its **target 10.7** on facilitating orderly, safe, regular and responsible migration and mobility of people. In the same vein, land release contributes to broader peace and security agendas, directly contributing to **SDG 16** Peace, justice and strong institutions.

In addition to this, the coordination of BHMACH with the IOM and other operators involved in supporting migrants, is indicative of mine action's support to **SDG 17** Partnerships for the Goals, and its **target 17.16** on enhancing the global partnership for sustainable development, and **target 17.17** on enhancing public, public-private and civil society partnerships.

SUSTAINABLE ECONOMIC GROWTH AND INFRASTRUCTURE

The released land in BiH has provided a safe environment for the construction of infrastructure. The increased mobility, internal and regional connectivity, and efficiency produced by such projects are essential to the country's development.

The Corridor Vc (Cvc) is a highway which connects the north of BiH to the south, covering more than 8,000 km in total.¹⁶⁵ The road plays a major role in trade flows, promoting economic integration between the Western Balkans and the EU.¹⁶⁶ It is funded by contributions from the Western Balkans Investment Framework, EU grants, and loans from the European Bank for Reconstruction and Development and European Investment Bank, estimated at a total investment of 1.1 billion EUR.¹⁶⁷ With over 1.5 million people living along the highway, it has served to greatly alleviate pressure from high traffic volumes and connect the country to the Western Balkan region.¹⁶⁸ Aside from improved trade flows, this infrastructure project has led to improved accessibility, includes two cross-border bridges with the EU, increased travel speeds, lower road accident rates and vehicle operating costs, and provided 5,000–7,500 jobs during its construction and for maintenance.¹⁶⁹

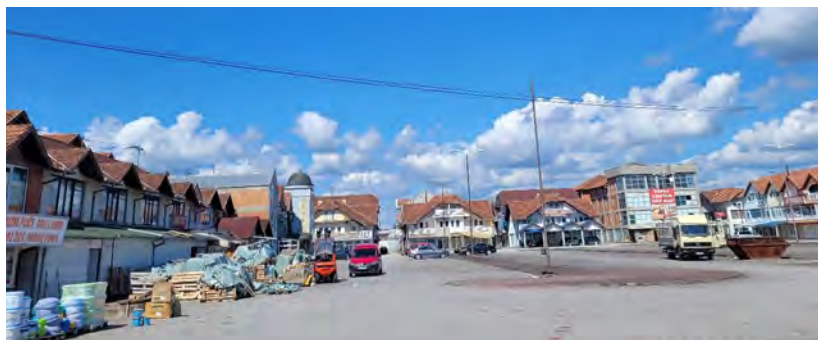
At the local level, a distinct connection between land release and the ability to undergo infrastructure projects was apparent from field visits to towns and villages visited as part of this case study. As a direct impact of mine action in Avramovina for instance, a new road was constructed (as seen in

Figure 12).¹⁷⁰ In addition, infrastructure projects in Donji Svilaj and Novi Grad were possible after completion of a set of clearance tasks that enabled the building of a road, a customs terminal at the border crossing, and a bridge. Funding from the European Development Fund awaits clearance of the area, and will cover a project that will enable the Sava River to further support the safe mobility of people and goods.¹⁷¹ Another result of clearance activities is a highway that was constructed in Brčko to link up with Belgrade, and which was funded by the Development Bank of Turkey.¹⁷² In Grbavica, the construction of the regional road running between Banja Luka and Bijeljina was also made possible as a result of clearance.¹⁷³

Completion of clearance tasks in Ulice made the reconstruction of community infrastructure possible. As already mentioned, it enabled construction of the road linking Brčko and Grbavica, which had been heavily contaminated but which represented an important crossroads connecting a number of local villages.¹⁷⁴

In Debelo Brdo, it was possible to create a railway and electric installation, and a house was built following the release of land. An electric station transformer was also reconstructed which supplies energy to the Zyco company across the river.¹⁷⁵

In Dubrave, the demining of former hazardous areas was a precursor for the construction of the Arizona market or Corridor market, a massive shopping centre which is of great benefit to RS, FBiH, and Brčko.



The Arizona market, in Dubrave, August 2021. Source: Picture taken by the GICHD during field visits

Following land release in Grbavica, the previously contaminated area was developed and now includes main roads and vegetation in the surrounding forests. Use of the woods has been made possible, as has agricultural activity, house reconstruction, and the building of the 365 Restaurant shown below.¹⁷⁶

FIGURE 15 SATELLITE IMAGES OF GRBAVICA, 2003 AND 2021

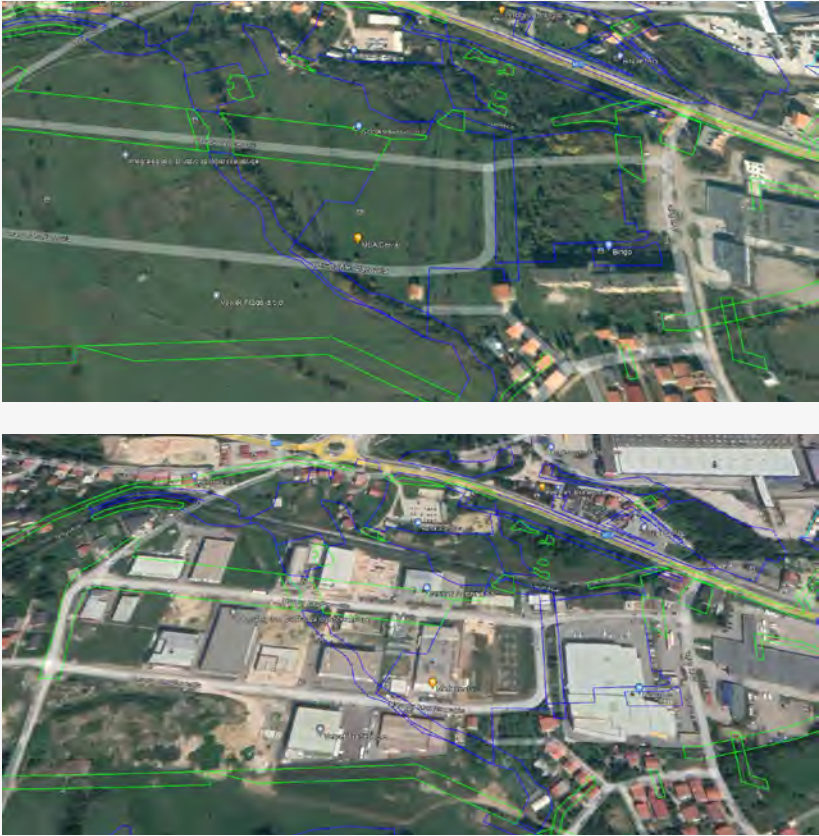


Source: Google Earth

In the area of Ugorsko-Vogošća in Sarajevo, the Pretis factory is located – a rocket production facility, warehouse, and test area where artillery and rocket ammunition were produced as well as projectiles with cassette ammunition for the Orkan missile system. A large part of the production facilities was relocated to Sokolac during the war. With a small number of pre-war employees remaining, today the Pretis factory employs dozens of

new workers. To the west of this MSA lies the village of Tihovići, consisting of 50 households, arable land, and meadows. Also extending along the MSA is part of an electric and water supply, in addition to sewage facilities which are critical to the functioning of the village.¹⁷⁷

FIGURE 16 SATELLITE IMAGES OF UGORSKO-VOGOŠĆA 2002 AND 2021 with colored polygons indicating areas of mine clearance operations through technical survey (green) and clearance (blue).



Source: Google Earth

The demining of Ugorsko-Vogošća enabled the safe movement of employees and visitors of the Pretis factory, as well as allowing for secure storage and testing of components and products. It also ensured the safe mobility of residents in surrounding villages including the densely forested hunting areas in the villages of Budišić and Perca to the east.¹⁷⁸

With land clearance as a precondition, it promoted donors' trust and investment in the land for developing infrastructure. These projects in turn have significant economic and social implications for the country, connecting it to regional trade flows, whilst also promoting connectivity at the local and, in particular, rural levels. Therefore, land release has contributed to **SDG 9** Industry, innovation and infrastructure, and its **target 9.1** on developing infrastructure, including regional and transborder infrastructure, to support economic development, **target 9.2** on promoting industrialisation and raising industry's share of employment and GDP, and **target 9.3** on increased access of small-scale enterprises to financial services, including affordable credit and their integration into value chains and markets.

As a direct result of land release, investing in infrastructure has led to the creation of jobs, both in terms of the construction and maintenance of the infrastructure, as well as through the impact that the projects have on local businesses in the long term. In this context, a linkage is found with **SDG 8** Decent work and economic growth, and its **target 8.1** on sustaining per capita income growth, and **target 8.2** that aims to achieve higher levels of economic productivity through diversification, technological upgrading and innovation.

TOURISM

Land release has directly contributed to sustainable tourism projects in BiH. Both cultural and recreational tourism have presented opportunities for economic growth, including through job creation, as well as increased institutional capacities.

In BiH, the contribution of tourism and travel to GDP is 10.2% (2018).¹⁷⁹ In 2019, the country had the third highest growth rate in the world, with the sector contributing 456 million USD to the economy. The tourism sector has however experienced a decrease in revenues of over 85% since the Covid-19 pandemic began in 2020,¹⁸⁰ with World Bank data reporting international tourism to be 6.338% of the country's total exports as of 2020, compared to 14.951% the previous year.¹⁸¹ Data from 2019 also shows that tourism represented 12% of the country's employment.¹⁸²

Bosnia is known throughout the region for its natural beauty, especially its forests and mountains and, in terms of recreational tourism, it draws many tourists in every season, including for mountaineering, climbing, skiing, and rafting.

The city of Sarajevo was the host of the 1984 Olympic Games, with its famous Olympic Mountains: Trebević, Igman, Bjelašnica and Jahorina. This area suffered damage as a result of the Bosnian War, with the surrounding areas being heavily mined. A hotel which was built as part of the Olympic Village in Sarajevo was turned into a prison during the war.¹⁸³ The Jahorina ski resort has recently been the site of major investment projects and development, with the construction of ski slopes for all levels, new lifts and elevators, a snowmaking system and lighting. The area is also well-known within the region for its entertainment facilities, hosting major concerts, music festivals, and performances.^{184 185}

The area of Istočni Stari Grad, one of the locations visited for the case study and where clearance has been carried out, is especially popular with tourists due to its proximity to Sarajevo and the possibilities it offers mountaineers and cyclists. The area is already of significant importance as a destination for recreation and tourism, with the potential to expand its existing infrastructure even more.



Image of Istočni Stari Grad, in Pale

Demining activities have also allowed people to make safe visits of a spiritual and religious nature to areas throughout BiH. Many places of worship have been renovated, including mosques, churches (Catholic and Orthodox), and synagogues.¹⁸⁶ In Dubrave, after a church had been demolished during the war, construction of a new building of the Franciscan Order was begun in 2002. Today, this location offers a safe place for all who wish to practice their religion, and is attended by up to 2,000 people on several occasions throughout the year and particularly on August 15, a national holiday (Feast of the Assumption). The church has developed a well-visited monastic art gallery, 'Galerij Šimun' which has tremendous spiritual significance for the local and rural populations. The demining of this region established a safe environment which has allowed visits to be organised, an extension of the church area into a cemetery, and the use and maintenance of access routes to the monastery and surrounding area.¹⁸⁷

Furthermore, with regard to social and cultural tourism, post-conflict tourism has adapted in various ways that commemorate the war and preserve its mark on the landscape and on the collective memory. In Sarajevo, various museums memorialise the siege of Sarajevo during the war and its post-war reconstruction, such as the permanent exhibition 'Sarajevo Under Siege'

at the B-H History Museum. The Sarajevo Tunnel Museum (also known as the Tunnel of Hope), was the only relatively protected passage that existed during the siege and which allowed food and humanitarian aid to enter the city and for people to get out. Today, the house in which the tunnel's southern entrance was hidden remains intact, and is now a museum. Alongside the house a reconstructed minefield has been installed in the courtyard.¹⁸⁸

In terms of cultural projects in Sarajevo, a memorial complex is located where the RBiH Army won a number of significant battles and where the first confrontation lines were placed. An annual ceremony is held in July as well as celebrations for other significant dates to commemorate the war. Žuč Memorial House pays tribute to the liberators of the Municipality of Novi Grad and the city of Sarajevo in the Battle of Žuč Hill, as the hill's defence was critical to the existence of Sarajevo as well as the entire state of Bosnia and Herzegovina.¹⁸⁹

The safe construction and repair of infrastructure in the form of restaurants, cable cars, hotels and other capacities for local businesses that promote tourist activities and job creation as a result of released land, has contributed to **SDG 8** on promoting sustained, inclusive, and sustainable economic growth. In particular, it links to its **target 8.1** on per capita economic growth, **target 8.3** on development-oriented productive activities, **target 8.4** on resource consumption efficiency, **target 8.5** on decent work, and especially to **target 8.9** on promoting sustainable tourism that creates local jobs. It has also shown links to **SDG 9** on building resilient infrastructure. By attracting tourism through facilitating access and security at sites of tourist interest, mine action particularly links to its **target 9.1** on developing sustainable infrastructure to support economic development.

By allowing the safe practice of religious and spiritual activities, as well as remembrance of the war, mine action contributes to the promotion of social harmony. Through enabling tourism that is in the service of protecting cultural heritage, through museum exhibits, allowing for the construction of memorial sites and for safe commemorative activities to take place, mine action contributes to **SDG 16** on promoting peaceful and inclusive societies, particularly its target **16.10** on ensuring public access to information.



Meeting between the BiH Mine Victim Assistance Coordination Body (MVACB), BHMVC and the Implementation Support Unit of the APMB in April 2022. Source: BiH MVACB

2. VICTIM ASSISTANCE

FIGURE 17

CONTRIBUTION OF VICTIM ASSISTANCE TO THE SDG TARGETS IN BIH



- 1.3** Implementation of social protection systems and measures
- 1.4** Equal rights to economic resources and access to basic services
- 1.5** Improved resilience, reduced vulnerability
- 1.b** Creation of pro-poor policy frameworks



- 5.1** End all forms of discrimination against all women and girls



- 3.8** Access to essential health-care services
- 3.c** Increased health financing and health workforce



- 8.5** Full and productive employment and decent work



- 4.3** Equal access to technical, vocational and tertiary education
- 4.4** Increased number of skilled youth and adults
- 4.5** Equal access to all levels of education
- 4.7** Universal knowledge to promote sustainable development
- 4.a** Building safe and inclusive learning environments



- 10.2** Social, economic, political inclusion of all
- 10.3** Equal opportunities, reduction of inequalities
- 10.4** Adoption of social protection policies



-
- 16.6** Development of accountable institutions
 - 16.7** Inclusive, participatory, representative decision-making
 - 16.10** Access to information and protection of fundamental freedoms
 - 16.b** Non-discriminatory laws and policies



-
- 17.6** Access to resources through North-South, South-South and triangular cooperation
 - 17.9** Enhanced international support for capacity-building
 - 17.16** Enhanced global partnership for sustainable development
 - 17.17** Effective public, public-private and civil society partnerships

The wording of the SDG targets listed above has been simplified; the full list of targets and their official names can be found on the United Nations website: <https://www.un.org/sustainabledevelopment/>

Victim assistance refers to a set of activities addressing the needs and rights of explosive ordnance (EO) victims and comprises emergency and ongoing medical care, rehabilitation, psychological and psycho-social support, socio-economic inclusion, as well as data collection and laws and policies.¹⁹⁰

Victims include persons either individually or collectively who have suffered physical, emotional and psychological injury, economic loss or substantial impairment of their fundamental rights through acts or omissions related to the use of EO. Victims include directly impacted individuals (direct victims), as well as their families, and communities affected by EO (indirect victims).¹⁹¹

Survivors refer to men, women or children who have been injured and possibly impaired as a result of an accident with EO.¹⁹²

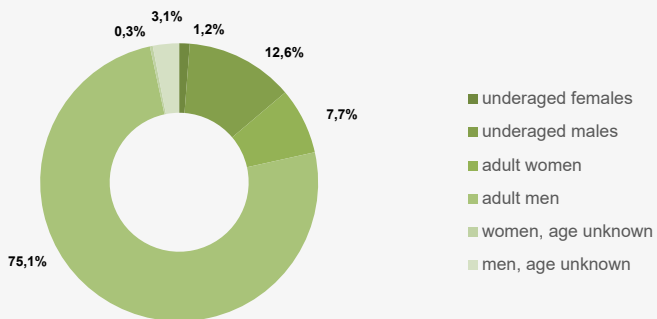
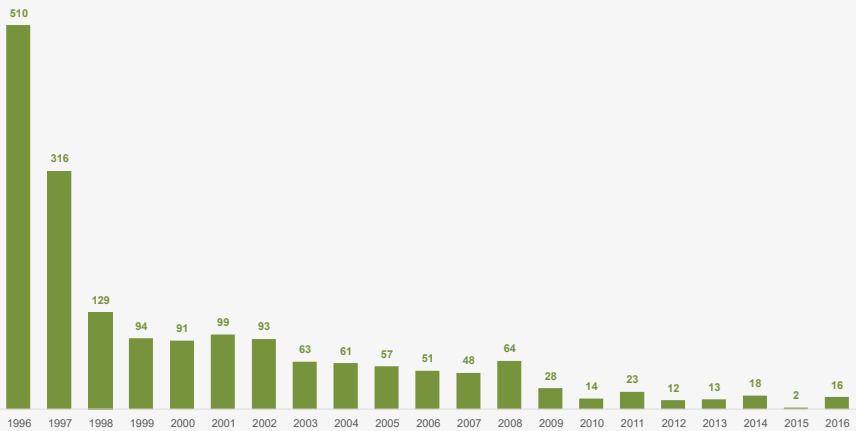
Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.¹⁹³

In the period 1992–2019, there were 8,419 direct victims of mines registered in BiH.¹⁹⁴ Of the total number of casualties, 6,103 survived.¹⁹⁵

Data analysis of victims conducted by the Bosnia and Herzegovina Mine Action Centre (BHMIC) indicated a decrease after the war ended, with 128 mine / explosive remnants of war (ERW) victims registered in the period 2009–2019.¹⁹⁶ ¹⁹⁷ There was a reported increase however in the years 2008 and 2016, reflecting the continued threat of ERW.¹⁹⁸ Analysis of mine / ERW victim information updated in the BiH Mine Action Information System showed that many of these accidents occurred predominantly when men entered contaminated areas to meet existential needs (i.e. collection of firewood and other raw materials).¹⁹⁹

In 2021, BHMAC reported three accidents resulting in four victims, three of which were fatalities. In the first, a boy was killed when he found ERW in the attic of his home. In the second, two hunters entered a marked minefield, stepping on a PROM-1 mine and neither survived. In the third, an operator from the civil protection force received minor injuries during EO disposal operations.²⁰⁰

FIGURE 18 MINE / ERW VICTIMS IN BIH, 1996–2016



Source: BHMAC,²⁰¹ own elaboration

Given the multi-sectoral approach of victim assistance (VA), it is linked to broader national policies and frameworks including health, human rights, poverty reduction, social protection, and education among others. Under the Anti-Personnel Mine Ban Convention (APMBC)²⁰² and Convention on Cluster Munitions (CCM),²⁰³ VA comprises the following six elements: i) data collection; ii) emergency and ongoing medical care; iii) rehabilitation; iv) psychological and psycho-social support; v) socio-economic inclusion; vi) laws and public policies.

In light of its converging aspects, victim assistance is provided by several government ministries: the Ministry of Health of the Federation of Bosnia and Herzegovina (BiH), the Ministry of Health and Social Welfare of Republika Srpska, Fund for Professional Rehabilitation and Employment of Persons with Disabilities in the Federation of BiH, the Fund for Professional Rehabilitation and Employment of Persons with Disabilities in Republika Srpska, the Ministry of Refugees and Displaced Persons of BiH, the Ministry of Labour and Social Policy of the Federation of BiH, and the Ministry of Civil Affairs of BiH.

Other national actors involved include the Organization for Amputees Republike Srpske (UDAS),²⁰⁴ Posavina Without Mines, STOP Mines Pale, the Centre for Development Support, and Eco Sports Group. International actors include World Vision, Hope '87, Arbeiter-Samariter-Bund, and The Miracles Centre for Prosthesis & Care in Mostar.

There is no clearly defined government focal point, however an official coordination mechanism was established called the Mine Victim Assistance Coordination Body (MVACB). Established by the BiH Council of Ministers in May 2018, the MVACB also serves as a technical and advisory body to the Ministry of Civil Affairs. Its members include representatives from institutions of the entities and Brčko District as well as representatives from the non-governmental organisation (NGO) sector.²⁰⁵ ²⁰⁶ The coordination body ensures cooperation between state, entity, and Brčko District institutions as well as NGO and international institutions when it comes to victim assistance-related activities. It is responsible for creating projects related to promoting the rights of and social status of victims, raising awareness about the issues and needs of mine victims, assessing the

implementation status of international conventions, reporting on the status of mine victims in BiH, and providing recommendations to projects and initiatives related to victims' rights.²⁰⁷

The National Mine Action Strategy 2018–2025 outlines operational goals for victim assistance in order to address the needs of victims and ensure their equal participation in society. To further the sustainability of activities beyond clearance obligations, the strategy recognises the importance of an integrated approach to VA, one that incorporates its goals into wider mechanisms and political structures to ensure the protection of survivors' rights. As such, the Demining Commission in BiH and BHMACH are responsible for the dissemination of victim data to the relevant ministries so that information is better consolidated at the institutional levels.²⁰⁸

In addition, the BiH Council of Persons with Disabilities^{209 210} is included in the MVACB.²¹¹ The Council does not, however, recognise mine / ERW victims as an affected group.²¹² This reflects broader distinctions in the legislation, as mine / ERW victims in general are not recognised as a special group of persons with disabilities when it comes to receiving disability benefits and assistance from social protection structures (as compared to the distinct categories of war veterans and civilian victims of war).²¹³

BiH has adhered to various international instruments related to victim assistance, disability, and inclusiveness:

- Ratification of the Convention on the Rights of Persons with Disabilities (CRPD)²¹⁴ in 2010 which requires its member states to ensure that all persons with disabilities (PWDs) enjoy full equality under the law and have the same rights and access to social, medical and rehabilitation services as the rest of the population. This entails regular reports to the UN Committee on the Rights of PWDs.
- Commitments to provide victim assistance through the APMBC as well as under the Convention on Conventional Weapons (CCW) Protocol V and the Convention on Cluster Munitions (CCM).²¹⁵

- Ratification of the UN Convention on the Rights of the Child as well as the UN Convention on the Elimination of All Forms of Discrimination against Women in 1993.²¹⁶ Both conventions reference protection of the rights of PWDs to fair treatment, appropriate care, and full participation in society.
- EU documents signed and ratified by BiH²¹⁷ include the Convention for the Protection of Human Rights and Fundamental Freedoms (1953) and its protocols²¹⁸ and the Convention on the Recognition of Qualifications concerning Higher Education in the European Region (1999) which maintains that no discrimination shall be made based on any grounds including the disability status of applicants.²¹⁹

On the national level, the disability legislation and policy frameworks in BiH ensure that the rights and needs of PWDs are guaranteed. The BiH Law on Prohibition of Discrimination (BHLPD) adopted in 2009²²⁰ established a framework to ensure equal rights and opportunities for all and regulates the system for protection from discrimination in BiH. It applies to procedures across all public bodies at the levels of state, entity, cantons and the Brčko District, and municipal institutions and bodies covering health, social, and employment protection among others.

On the entity level, Republika Srpska (RS) has adopted the strategy titled 'Republika Srpska Social Inclusion Strategy for 2021–2027'²²¹ and the Federation of BiH has adopted the strategy titled 'Strategy for advancement of rights and status of persons with disabilities in the Federation of Bosnia and Herzegovina 2016–2021.'²²² Along with the BHLPD, the F BiH and RS Strategies also provide inclusive measures to enable full participation in all aspects of life.²²³

Furthermore, the Law on Social Protection, Protection of Civilian Victims of War and Protection of Families with Children ensures the basic rights as well as social and economic protection of civil victims of war and their family members. A law on social protection also exists for RS and Brčko District which includes pension and disability insurance for individuals and their families.²²⁴

Laws on professional rehabilitation and employment of disabled persons exist in both entities.^{225 226} They outline conditions and measures required for modifying workplace conditions to better accommodate persons with disabilities, and for them to be able to carry out tasks on an equal level with other employees.²²⁷ In accordance with these laws, the Professional Rehabilitation and Employment of Persons with Disabilities Fund was founded in each entity with funds allocated annually to support the employment of PWDs.²²⁸

These efforts to protect the rights and address the special needs of PWDs including mine / ERW victims have contributed to the achievement of **SDG 10** Reduced inequalities, and its **target 10.2** aimed at empowering and promoting inclusion for all irrespective of, inter alia, disability, **target 10.3** on ensuring equal opportunities and reducing outcome inequalities, including by promoting appropriate legislation, policies and action in this regard, and **target 10.4** on adopting policies to achieve greater equality. There is also a direct contribution to **SDG 16** Peace, justice and strong institutions, and its **target 16.b** on promoting non-discriminatory laws and policies.

In particular, by facilitating universal access to healthcare services, including the access of women, girls, boys and men to physical or psycho-social rehabilitation, as well as social and economic reintegration, there is also a link with **SDG 5** Gender equality, and its target **5.1** on ending all forms of discrimination.

By promoting access of PWDs to employment, victim assistance has contributed to **SDG 8** Decent work and economic growth, and its **target 8.5** on achieving employment and decent work for all, including persons with disabilities.

While mine / ERW survivors still face challenges in accessing the same health services as other PWDs, there is no doubt that VA efforts have directly contributed to **SDG 3** Good health and well-being, in terms of **target 3.8** on universal health coverage and quality healthcare services, and **target 3.c** on increasing the financing, training and recruitment of the health workforce.

INCLUSION OF MINE / ERW VICTIMS

Efforts to include mine / ERW victims in VA and organisational leadership are reflected in mine victims' representative organisations comprising part of the MVACB. In RS, the Ministry of Health and Social Welfare designated a mine survivor as the national coordinator to improve the healthcare of persons with disabilities within the entity. The ministry also worked with organisations for PWDs through coordinating a cross-sectoral working group.²²⁹

In terms of survivors' active engagement within existing mechanisms, mine / ERW survivors and representative organisations have also been included in the Working Group for Mine VA and CCM.²³⁰ The NGO Landmine Survivors Initiatives, based in Tuzla, has also advocated for survivor participation in drafting the BiH VA statement for the Meeting of States Parties to the Convention on Cluster Munitions.²³¹

Both national operators Mines Advisory Group (MAG) and Norwegian Peoples' Aid (NPA) employ EO survivors in their activities and provide channels for their contribution and participation as informants. MAG reports employing three EO victims. Using a peer-to-peer approach has been an important method of reaching out to individuals in communities, and MAG employees that are survivors have been key to this process as they are able to relay genuine testimonies based on life experience.²³² NPA also employs victims to support mine action efforts, mostly as key informants and liaison officers during the implementation of risk assessment activities. For example, one survivor was employed as a support officer during the implementation of risk assessment activities for populated areas near the ammunition storage site in Dobož. Mr. Dragan Tomanic, also from the city of Dobož, was injured and lost his hand as a result of a mine (PMR-2A) in 1992. He personally participated in the rescue of deminers from another company on two occasions when mine activations occurred in his forest during demining. Dragan was also one of the key informants on mines when NPA conducted land release activities in the Dobož region (2015–2018).²³³

Through various efforts to include survivors and represent their needs in political plans and discussions, victim assistance contributes to **SDG 16, target 16.6** on developing effective and accountable institutions, and **target 16.7** on ensuring responsive, inclusive and representative decision making at all levels.

COMMUNITY-BASED REHABILITATION: MEDICAL AND PSYCHO-SOCIAL SUPPORT

Community-based rehabilitation (CBR) in the context of mine / ERW victim assistance in BiH is implemented through integrated efforts of PWDs, their families and communities, and the relevant governmental and non-governmental organisations across the health, education, vocational, and social services sectors among others.

Capacities for effective treatment of mine / ERW victims have improved in relation to the previous post-war limited conditions and shortages of equipment and personnel. In FBiH, there are 38 CBR centres and 44 community mental health centres that provide mental and physical services to mine / ERW survivors.²³⁴ CBR centre services encompass psycho-social support, occupational therapy, and various forms of physical rehabilitation from thermotherapy, electrotherapy, physiotherapy, ultrasound therapy, and walking school, in addition to making and fitting prostheses. Multidisciplinary teams work in mental and physical health CBR centres to deliver patient care through coordinated efforts, including psychiatrists, psychologists, social workers, occupational therapists, physicians, physiotherapists, and nurses. CBR centres also work with general hospitals for patients needing operative treatments.²³⁵

Services which support the physical and mental health of individuals can help eliminate barriers to individuals' active participation in the community and greater society. Therefore, by improving the quality of life of PWDs through access to mental and physical services, VA efforts through CBR promote equal opportunities for PWDs, poverty reduction, and social inclusion.²³⁶ There are several examples of institutional partnerships undergoing this work, such as ITF²³⁷ which has provided treatment and prosthetic devices for survivors at The Miracles Centre for Prosthesis in Mostar.^{238 239}

UDAS²⁴⁰ also assists survivors in the process of applying for new prosthetics by offering legal support, advice, and referrals to relevant providers such as prosthetics workshops and rehabilitation centres.²⁴¹

Under a partnership between World Vision and UDAS through an EU-funded project,²⁴² training workshops²⁴³ were organised for the staff of mental health and CBR centres for mental and physical health across 10 municipalities.²⁴⁴ The training addressed the challenges of rehabilitation of survivors and aspects of peer support for trauma recovery. The initiative brought together health professionals and survivors by also establishing peer support groups, engaging over 60 mine survivors and 25 CBR employees. This promoted survivors' inclusion on a local community level and access to rehabilitation services and information.²⁴⁵ The peer support practice provided the opportunity for survivors to be heard and supported in a professional setting extending beyond their personal network.²⁴⁶

There have been initiatives implemented which target and support the particular physiological and psychological needs of mine / ERW victims. In June 2021, the Mine Detection Dog Training Center in partnership with ITF Enhancing Human Security, initiated a VA project 'For a Life Without Pain'²⁴⁷ in BiH. The initiative has allocated funds for the production of a total of 60 lower and upper prostheses for 55 people²⁴⁸ in addition to physical rehabilitation and psychological and peer support. The project supports the role of both government and donor support through a co-funding partnership which combines government health funds received by survivors, with donor funds. This project addresses the specific needs of individuals, with the aim of providing prostheses which are comfortable and functional according to physical activity, age and gender and including

transportation to centres during the rehabilitation process. Prosthetic fitting counselling and advisory support is also provided to EO victims and their families in order to assist them in adjusting to the new circumstances.²⁴⁹

VA efforts to train health professionals at the local level contribute to achieving **SDG target 3.c** on increasing the financing, training and recruitment of the health workforce. In addition, by raising awareness about services available for PWDs including mine / ERW survivors, VA efforts have also contributed to **SDG target 16.10** on ensuring public access to information and protecting fundamental freedoms.

Besides these specific contributions, the establishment of partnerships for VA also promotes **SDG 17** Partnerships for the Goals and its **target 17.6** on triangular regional and international cooperation to enhance access to mine action and victim assistance knowledge, **target 17.9** on enhanced international support for implementing effective and targeted capacity building, and **target 17.16** on knowledge sharing and expertise through multi-stakeholder partnerships, and **target 17.17** on enhancing public, public-private and civil society partnerships.

The Covid-19 pandemic presented particular challenges for PWDs, including safe access to resources and goods as well as limited contact with one's community. During what continues to be an uncertain and isolating period especially for mine / ERW victims, peer support groups have been a source of information, community building, and empowerment.

ITF Enhancing Human Security also implemented a project in partnership with UDAS from May 2020 to July 2020 to support mine victims and other PWDs through establishing support groups and community interventions. Moreover, food packages and hygiene packages were distributed to direct and indirect mine victims. 20 support groups were established, with 145 members across 14 municipalities in BiH.²⁵⁰ Given the distancing measures in place, coordination of activities relied upon digital communication channels, namely Viber and Skype.²⁵¹

VA efforts have therefore helped to alleviate the shock of the Covid-19 pandemic, which has significantly impacted all areas of life on the national, communal, and individual levels. PWD individuals and their families have

had to adapt to new health and security measures in addition to changes already made to their lifestyles with respect to the mine / ERW accident.²⁵² VA efforts have helped adapt to such changes which have broad implications not only on material realities but also the mental health and personal relations of PWDs and their family members.

SOCIO-ECONOMIC INCLUSION

The exclusion and discrimination of PWDs has long been an issue in BiH. Mine victims face economic and social exclusion from society since BiH lacks the infrastructure to support the economic independence of PWDs.²⁵³ This is furthered by the societal stigma towards PWDs which prevents affected individuals from being able to fully integrate into society and therefore contribute to the sustainable and equitable development of their communities.

For instance, the aim of the World Vision and UDAS project was to provide economic and social support to 200 direct mine victims and their families across 11 municipalities.²⁵⁴ A workshop in the spring of 2018 provided 26 beneficiaries²⁵⁵ with a business training class enabling them to start small-scale businesses. This was of great value particularly in view of the employment rate of 25% in the country at the time. The course offered management and entrepreneurial capacity building, technical and resource mobilisation support to purchase tools and equipment. Participants were provided with agricultural and artisanal equipment or livestock based on individual need and preference. This in turn benefitted 170 family members including 61 children, as mine survivors were equipped with the tools to independently provide for themselves and their families.²⁵⁶ This also contributed to overall increased economic livelihood, improved living conditions, and greater participation and acceptance in society.

In addition to the workshop, agricultural tools (e.g. milling machines, plows, potato harvesters) were distributed to families across the 11 designated regions included in this joint World Vision-UDAS project.²⁵⁷ As managing farm operations with a mine injury and manual tools presents several challenges, the donations facilitated the labour process for survivors and their families by allowing for increased cultivation of the land, and contributed to increased quality of life by also allowing more time to be able to meet other needs.²⁵⁸

By promoting access of victims to economic resources and financial services, victim assistance has directly contributed to **SDG 1** No poverty, and its **target 1.3** on implementing nationally appropriate social protection systems and measures for all, **target 1.4** on ensuring that the poor and the vulnerable have equal rights to economic resources and financial services, and **target 1.5** on building resilience of the poor and those vulnerable to shocks, and **target 1.b** on creating frameworks based on pro-poor and gender sensitive-development strategies.

The implications of this positively impact not only the beneficiaries themselves but also their families, as a severe injury to the family breadwinner can deeply impact other relatives, who are considered to be indirect victims. The national mine action strategy in BiH reflects this by stating the importance of VA services addressing psychological and social needs not only of survivors themselves but also of affected family members.²⁵⁹

Discrimination and the exclusionary attitude towards mine victims in various aspects of their lives also includes institutional barriers preventing equal access to education more broadly, which further exacerbate their lack of economic independence. The promotion of inclusive educational opportunities for victims is therefore a crucial means of promoting survivors' access to the labour market, which has long-term effects on the ability for individuals to provide for themselves and their dependents as well. ITF, for instance, allocates funds to direct mine victims or their family members. The organisation awarded 19 scholarships of 137 USD per month over a period of nine months in the academic year 2017–2018 in its project 'Landmine /

UXO Survivors Scholarships in BiH', including 11 men and 8 women from across BiH, allocating 25,000 USD in total. The majority (79%) were enrolled in Bachelor's programmes and wide-ranging fields of study.²⁶⁰

Through the provision of vocational training and other income-generating activities, as well as efforts to promote educational opportunities for survivors and their families, victim assistance has further contributed to **SDG 4** Quality education, and its **target 4.3** on ensuring equal access to vocational and other education, **target 4.4** on increasing the number of adults who have skills for employment and decent jobs, **target 4.5** on ensuring equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, and **target 4.a** on providing safe, non-violent, inclusive, and effective learning environments for all.

Sports have also been an outlet not only for psychological and physical rehabilitation but also for the social integration of victims. Also, as part of World Vision's two-year project in partnership with UDAS, a sitting volleyball tournament titled 'Mine-free BiH by 2025' was held in 2018 in Doboje, a town in central BiH. This brought together mine survivors from diverse local communities.²⁶¹

For the past 15 years, ITF Enhancing Human Security has supported the Sitting Volleyball Club Fantomi from Sarajevo (OKI Fantomi) in organising the international tournament of sitting volleyball or 'Sarajevo Open'. Its aim has been to raise awareness about the threats of explosive ordnance and the importance of mine action projects, whilst also providing an opportunity for teams across Europe to gather and exchange knowledge. In 2019, it brought together 10 international teams from Russia, Ukraine, Germany, Bosnia and Herzegovina, Turkey, Slovenia and Croatia.²⁶² In 2020, participants followed Covid-19 safety measures and the tournament was held with no audience members. Six teams competed, including the BiH women's national team in sitting volleyball.²⁶³ In 2021, several teams cancelled participation due to Covid restrictions, however a strong turnout of eight teams did compete, coming from BiH, Croatia, and Serbia.²⁶⁴

Similarly, water sports have also served as a form of clinical and psychological rehabilitation as well as social integration. Established in BiH in 2003, the organisation Eco Sports Group facilitates such activities, providing mine victims and their families the opportunity to participate in various water sports.²⁶⁵

Among other activities, art is a powerful medium through which VA has shaped societal acceptance and the integration of survivors while promoting overall well-being. A travelling exhibition of survivors' artwork in 2019²⁶⁶ created an interactive space which showcased both their individual experiences and creative expression and which increased their participation in the community. It presented an opportunity to positively shape culture and rewrite socially constructed narratives of difference by spreading awareness about the dangers of landmines as well as the challenges faced by mine-affected communities. Welcoming the general public, the opening discourse focused on the elimination of barriers to the social and economic inclusivity of mine victims in the community.²⁶⁷

By creating a positive setting which allows survivors the opportunity to engage in a team effort, sports activities can offer the added therapeutic benefits of fostering a sense of belonging and self-confidence which permeates into other aspects of life. In addition to vocational training and peer support group initiatives which VA provides, sports and arts activities also contribute to **SDG target 4.a** on providing safe, non-violent, inclusive, and effective learning environments for all, especially by means of peer support group initiatives, as well as **target 4.7** ensuring education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

The longer-term impact of the aforementioned VA projects is for survivors to engage in a fuller capacity as members of their communities and across economic, social, educational, and political dimensions. Taking into account BiH's pluralistic society and the political tensions present, mine victims are often gathered in groups reflecting ethnic associations, with mostly former combatants as members. In the case of VA initiatives, like the World

Vision entrepreneurial training workshop for instance, 11 ethnicities were represented from municipalities across BiH.²⁶⁸ A participant noted that it was the first time they had taken part in an inter-ethnic gathering of amputees.²⁶⁹

Ethnic inclusion through victim assistance activities can therefore contribute to the existence of a peaceful pluralist society. By building social cohesion and promoting dialogue across ethnic groups, VA in BiH is linked to **SDG 16** and the promotion of peaceful and inclusive societies.



Mine Risk Education presentation by IOM BiH. Source: IOM BiH

3. EXPLOSIVE ORDNANCE RISK EDUCATION

FIGURE 19

CONTRIBUTION OF EORE TO THE SDG TARGETS IN BIH



3.d Strengthened capacity for risk reduction



10.7 Safe migration and mobility



4.5 Equal access to all levels of education

4.7 Universal knowledge to promote sustainable development

4.a Building safe and inclusive learning environments



11.4 Safeguarding the world's cultural and natural heritage



5.1 End all forms of discrimination against all women and girls



15.2 Promote implementation of the sustainable management of all types of forests

15.5 Reduce the degradation of natural habitats, halt the loss of biodiversity, and prevent the extinction of threatened species



8.9 Promotion of sustainable tourism



-
- 16.1** Reduction of all forms of violence
 - 16.6** Development of accountable institutions
 - 16.7** Inclusive, participatory, representative decision-making



-
- 17.9** Enhanced international support for capacity-building
 - 17.16** Enhanced global partnership for sustainable development
 - 17.17** Effective public, public-private and civil society partnerships
 - 17.18** Capacity-building support to improve access to and quality of data

The wording of the SDG targets listed above has been simplified; the full list of targets and their official names can be found on the United Nations website: <https://www.un.org/sustainabledevelopment/>

Explosive ordnance risk education (EORE) “refers to activities which seek to reduce the risk of injury from EO by raising awareness of women, girls, boys and men in accordance with their different vulnerabilities, roles and needs, and promoting behavioural change. Core activities include public information dissemination, education and training.”²⁷⁰

International Mine Action Standard (IMAS) 12.10 on explosive ordnance risk education (EORE),²⁷¹ Second Edition, Amendment 3, September 2020 represents the most substantial update of this standard since 2009. One of the key changes in the revised IMAS 12.10 is the shift in terminology from MRE to EORE which has been widely adopted by the sector.

In this context, the updated IMAS 12.10 on EORE establishes principles and provides guidance for the effective assessment, planning, implementation, management, monitoring and evaluation of EORE interventions.

Mine risk education (MRE)²⁷² has been a formal part of the Bosnia and Herzegovina Mine Action Centre’s (BHMACE) mine action agenda since 2003, with relevant data also being collected from this point onwards.²⁷³ ²⁷⁴ By raising awareness, risk education helps communities to adopt safer behaviour in their daily lives especially when their activities take place on explosive ordnance- (EO) contaminated land, allowing for social and economic development to continue.

BHMACE is responsible for defining the national standards for MRE and the coordination of all MRE activities throughout Bosnia and Herzegovina (BiH) in cooperation with other accredited organisations²⁷⁵ ²⁷⁶ as well as the training of MRE managers.²⁷⁷ Other implementing actors involved include the Armed Forces of BiH, the multinational European Union Force in BiH (EUFOR), the Federal Administration of Civil Protection, Civil Protection RS, Norwegian People’s Aid (NPA), the Red Cross in BiH, the International Organization for Migration (IOM), and the NGO Posavina Without Mines.²⁷⁸

In 2019, BHMAC documented the implementation of 11 MRE projects reaching 36,925 beneficiaries.²⁷⁹ BHMAC reports that 29,944 people received MRE (13,350 women and 16,594 men) in 2021 as a result of six projects.²⁸⁰ NPA reported that in 2021 its MRE activities reached 6,806 people (2,523 women, 2,970 men, 646 girls, and 667 boys) living in affected communities within its areas of operation in BiH.²⁸¹

Activities include public information dissemination through community liaison, cooperation with media, and public communication (i.e. posters, billboard signs, brochures, digital applications), education through the integration of risk education in the regular educational curriculum of primary and secondary schools in coordination with the Ministry of Education, and emergency risk education. Other activities include general survey and permanent marking projects.

The planning and implementation of MRE activities is informed by data gathered through general surveys and the capacities of local communities classified by level of threat. This is reflected in the data collected in the BHMAIS (Bosnia and Herzegovina Mine Action Information System) database, revealing patterns of accident occurrence, as well as other habits and activities within local communities.²⁸² BHMAC is developing a new web database system to replace the current one, which would increase the accessibility and transparency of mine action data.²⁸³ Since 2019, data is in the process of being transferred from the BHMAIS to the Information Management System for Mine Action Core. In 2020, BHMAC additionally released a geographic information system mobile application for Android and iOS Apple devices which would enable public access to information on the location of hazardous areas. This is being integrated into MRE activities.

²⁸⁴ ²⁸⁵

BiH relies on several key documents which outline the plans and measures for effective implementation of activities in order to standardise the delivery of MRE. These include the Standard for Mine Risk Education in BiH, Standard Operational Procedures BiH, Accreditation Guide for Mine Risk Education Organizations BiH and Mine Risk Education Strategy for 2009–2019.²⁸⁶ ²⁸⁷ According to the current Strategy, mine awareness falls under Strategic Goal 4, “Safe behaviour is promoted through gender and age sensitive mine awareness measures that take into consideration differences

in age to decrease the number of accidents caused by mines/ERW and to support safe and sustainable activities necessary for existence” and the following operational goals:²⁸⁸

1. By the middle of 2018 and under BHMAL leadership, there will be revision, updating and forwarding for approval of the Mine Awareness Standard and mine awareness standard operational procedures.
2. Since January 2018, under BHMAL leadership, there will be a continuous identification and prioritisation of affected groups. Within these, there will be a continuous conduct of adequate MA measures which are gender and age sensitive, under the leadership of BHMAL.
3. BHMAL will ensure efficient coordination of MA activities through the working group meetings with all relevant stakeholders, which will be held twice a year (or more often if need be).
4. By 2020, MA measures will be integrated into 13 educational systems, with continuous conduct through gender and age sensitive materials, through coordination between BHMAL and Ministry of Education.

In accordance with Action 29 of the APMBC, taking diversity factors into consideration enables organisations involved to address risk exposure in a deeper and more sustainable manner when designing programmes.

Furthermore, creative approaches to MRE of specialised NGOs in BiH include the participation of numerous stakeholders from local communities and activities carried out through a variety of approaches, in the form of puppet shows, peer to peer education, curriculum development, door-to-door visits for adults, and information and training campaigns.²⁸⁹

In terms of inclusivity and gender equality, BHMAL maintains mixed MRE teams on the ground. This is of particular importance for door-to-door activities especially, as oral presentations are adapted to more effectively cover target populations by facilitating access to women who feel more comfortable speaking with trainers of the same gender.²⁹⁰ For NPA, mixed

gender representation is an obligation in their community liaison and EORE teams.²⁹¹ Ensuring gender representation in teams has allowed for higher quality data collection and has therefore been critical in establishing the specific needs of women, girls, men, and boys from various backgrounds including from marginalised communities, and persons with disabilities (PWDs).²⁹² Within the NPA organisational structure, one multitasking team comprised of one female and two male employees from various backgrounds implements EORE, community liaison, and impact assessment activities.²⁹³

BHMAC further adapts its presentations with specific messages based on the audience. For instance, PWDs are included in MRE activities by inviting someone from within the community in the presentation to share his / her experience.²⁹⁴ Hearing a peer speak about a shared experience as a survivor has positive implications on the community by creating a safe space in which others can relate and feel heard. By learning about someone else's journey through the mental and behavioural consequences of psychological trauma, as well as advice about how to cope with the changes, individuals in similar situations can better envision their own progress.

By maximising its reach to promote safe behaviour and reduce the number of accidents among all groups, MRE in BiH has contributed to **SDG 10** on reducing inequalities and its **target 10.7** on facilitating safe mobility of people.

By targeting women, girls, boys and men in accordance with their different vulnerabilities, roles and needs and by promoting safer behaviours, MRE efforts have also contributed to **SDG 4** Quality education, and its **target 4.5** on eliminating gender disparities in education at all levels for the vulnerable, and **target 4.a** on providing safe, non-violent, inclusive and effective learning environments for all. It has also contributed to progress towards **SDG 5** Gender equality, and its **target 5.1** on ending all forms of discrimination against women and girls.

The collective impact of these developments has served to promote **SDG 3** Good health and well-being, and its **target 3.d** on strengthening the capacity for early warning, risk education and management of health risks.

MARKING TERRITORIES

Emergency marking²⁹⁵ of boundaries of suspected hazardous areas (SHAs) and confirmed hazardous areas (CHAs) is a preventative and risk reduction measure which involves placing signs and informative billboards in those areas where humanitarian demining operations are being planned. The BHMAC's project to cover risk areas with emergency markings is a joint effort involving the Armed Forces of BiH together with BHMAC staff. In addition to covering unmarked areas, this process includes renewing all mine risk education signs that have been destroyed.²⁹⁶

There is an urgent need to consistently maintain and replace signs. Between 2018 and 2019, an area of 1.26 square kilometres of SHAs was permanently marked with 171 signs.²⁹⁷ BHMAC reports that 2,869 emergency markings were placed in 2021.²⁹⁸

For instance, under the BHMAC and Posavina Without Mines project 'Mine risk education activities in the municipalities of Ugljevik and Lopare', 49 out of 120 signs placed in the previous period remained in good condition while 71 had to be renewed and 23 new signs were placed to mark the entirety of an SHA in Ugljevik.

The project also saw the need for intensified education and public information for the endangered population, which continues to enter the SHA to cut firewood.²⁹⁹ This also points to the need to target adult men in particular, as BHMAC data reporting on mines / explosive remnants of war (ERW) has shown this section of the population to have a greater risk factor to exposure. Data also reveals the seasonal nature of incidents which occur mostly in the autumn and spring, during the collection of firewood and raw materials.³⁰⁰

It is important to note however, that despite the extensive efforts of MRE and signs warning of mines, risk taking is still being documented. Individuals knowingly enter SHAs to maintain their livelihoods, for retrieving firewood or collecting scrap metal, due to the difficult economic situation in BiH.³⁰¹

The urgent need for marking territory and maintaining signs to ensure the safety of communities is of even greater concern given that between 2009 and 2019, of the 128 mine / ERW victims reported in BiH, more than 80% of accidents occurred in 3rd category locations.³⁰² These areas are categorised as encompassing SHAs with the least possible risk due to their location in remote areas, between confrontation lines from the war, without strategically significant natural resources and any evident reasons for people to approach.³⁰³ This reinforces the critical and preventative role of sustained MRE in order to warn communities from entering seemingly unlikely risk areas.



Permanent marking of territory located in the Brčko District. Source: MAG

Through broad, integrated, and quality data informing efforts to diminish the number of mine victims across affected communities in BiH, MRE contributes to **SDG 16** Peace, justice and strong institutions, and its **target 16.1** on significantly reducing all forms of violence and related deaths by promoting a reduction of at-risk behaviour in a sustainable manner and increasing the security situation and perception of safety in contaminated areas.

EDUCATIONAL ACTIVITIES IN SCHOOLS

MRE is a mandatory subject in every school within the cantons of both entities as well as in the Brčko District.³⁰⁴ BHMAC provides training to help teachers integrate lessons into the school curriculum and reach children of all ages.³⁰⁵

The NGO Posavina Without Mines, in partnership with the Mine Mark Foundation, has also begun integrating MRE into primary school curriculums in BiH. Beginning in the spring of 2021, the project was implemented in nine schools within the Brčko District and Posavina Canton. Its aim is to raise awareness about the importance of continued MRE for children. Educational materials such as posters for classrooms are provided as well as needs-based advisory support for teachers.³⁰⁶

Working with children is also central to the activities and mission of the Red Cross Society in BiH, in order to raise awareness about the threat of mines. In this regard, they organise annual so-called 'Think Mines' competitions in primary schools.³⁰⁷ This is a competition held in every school that tests participants' knowledge of the mine contamination situation in BiH. It did not receive approval to go ahead over the last two years due to the Covid pandemic, however there is a plan to start again in 2022.

With the aim of adapting educational activities for schools during the Covid-19 pandemic, the Red Cross and EUFOR, in coordination with BHMAC, each created a short movie on MRE. The films were distributed to schools as part of their online education and have also been helpful in reaching a wider audience, including sectors of the population which BHMAC tries to cover, such as hunters, agricultural workers and tourists.³⁰⁸

An 'MRE through Viber Groups' programme was established in primary schools during the pandemic in November 2020–March 2021, when classes could not be held in person, and served as an effective platform for engagement to ensure continuity in instruction about safe practices in proximity to CHAs. This project contributed to students' awareness about the risks of explosive ordnance (EO) exposure as well as the long-term

nature of the issue in BiH. Implemented during the 2020–2021 school year, the project reached about 25,000 children and also extended to those participating indirectly with the children i.e. parents and siblings.³⁰⁹

Other actors involved in MRE for schools include the EUFOR Mine Information Department and accredited and trained instructors from their Liaison and Observation (LOT) teams. The EUFOR Mine Risk Education team consists of one MRE manager and 50 MRE instructors. LOT teams are located in 17 LOT houses across BiH, each with their own area of responsibility.³¹⁰ In addition to organising MRE across BiH, LOT teams work jointly with the BiH Armed Forces to organise lectures for children and teachers about the dangers of EO.³¹¹

By enhancing partnerships and strengthening MRE across schools in BiH through sustainable approaches which address both the short- and long-term impacts of EO, MRE aims to reduce casualties in the broader community and especially among children, in line with **SDG 16** Peace, justice and strong institutions. The establishment of such partnerships strongly connects to **SDG 17** Global partnerships for the Goals, and its **target 17.9** on enhanced international support for implementing effective and targeted capacity building, **target 17.16** on knowledge sharing and expertise through multi-stakeholder partnerships, and **target 17.17** on enhancing public, public-private and civil society partnerships.

Implementation of a project by BHMAC in April 2022 in primary schools aims to systematically cover the younger generation in BiH, in particular. This population has less knowledge about the war and war-related dangers in the way that the older generations do, and as a result is not as equipped with information regarding mines and unexploded ordnance (UXO). The initiative will adapt to this audience's level of background and education about the war. This is part of a longer-term process that will carry implications for future years, given that even when minefields are cleared, residual risk and the presence of UXO will continue to be an issue of concern.³¹² Passing on this information can be seen as contributing not only to the safe mobility of future generations, but also as part of a longer-term project of collective remembering post-conflict.

Educating the younger generation about recent history is fundamental to building sustainable peace, and additionally links to **SDG 16** and the promotion of peaceful and inclusive societies. By integrating this knowledge about the recent past into the primary school curriculum, this MRE project strengthens **target 16.6** on developing accountable and inclusive institutions at all levels.



EUFOR Mine Risk Education program in primary schools. Source: EUFOR in BiH

MOBILE APPLICATION

The 'Mine Suspected Areas' mobile application launched by BHMACH³¹³ provides maps of all SHAs and CHAs throughout BiH, with location tracking and alert notification options to notify users of their proximity to a minefield.³¹⁴ This provides users with the exact distance to the nearest SHA / CHA as well as instructions on how to respond to or report a suspicious object.³¹⁵ Photos taken of suspected objects can be directly sent to institutions in BiH and calls can be made to relevant authorities for direct assistance on the spot.³¹⁶ In situations where printed maps were previously relied upon,³¹⁷ the application delivers the potential for increased secure mobility with up-to-date mapping of mine suspected areas.



Picture: Screenshot of the MSA mobile app

Information on the application has been disseminated through BHM MAC’s activities and MRE presentations.³¹⁸ It is also being implemented by NPA teams in its EORE activities in order to reach a larger number of people, particularly children, to ensure that those most at risk are aware of the threat.³¹⁹

Given the interactive capabilities and public accessibility of more accurate data to all citizens, use of ‘mine suspected area’ applies to a range of contexts, further contributing to the overall security of individuals near SHAs, which in turn contributes to **SDG 17** Partnership for the Goals, and its **target 17.18** on capacity-building support to improve access to quality of data.

Beneficiary groups so far include members of the Mountain Rescue Service who identify minefields on their routes during rescue missions as well as the Border Police, due to their daily search for missing persons.³²⁰

As there have been numerous cases of mountaineers and tourists encountering EO, the mobile application’s coverage of mountainous areas has been reported to be helpful in promoting the overall security of mountaineers, in particular among tourists.³²¹ In addition to the application, BHM MAC regional offices have worked with local communities to find the best solution for the specific area to increase tourist potential – whether it be through emergency marking, clearing, or MRE programmes. Projects have included working in the Konjic municipality to ensure the safety of the rafting area along the Neretva River as well as working with the Una National Park in Bihać.³²²

By enabling the affected communities to participate in priority setting and strengthening their skills to participate in these processes, MRE is a contributor to **SDG 16** and its **target 16.6** on developing effective, accountable, and inclusive institutions, and **target 16.7** on ensuring responsive, inclusive and representative decision making at all levels.

Promoting tourist safety through use of the mobile application, emergency marking of SHAs conducted by BHM MAC regional offices, along with other MRE programmes, increases the tourist potential of the given area.³²³ The long-term implications of this are in support of **SDG 8** Decent work and economic growth, and its **target 8.9** on promoting sustainable tourism, as well as **SDG 4, target 4.7** on enhancing universal knowledge to promote sustainable development.

In addition to mountainous areas, the mobile application also provides information about SHAs in the many forests of BiH. The impact of MRE and access to knowledge about the threat of EO in these forest contexts protects workers involved in such environments and strengthens efforts related to both the cultivation and protection of forests. With regard to the protection of natural habitats, increased safe access to contaminated forests as a result of MRE tools means that certain areas are better able to be managed. This lowers the risk of forest fires for instance, and serves to protect human life, wildlife, and to conserve biodiversity.³²⁴

By enabling the protection of forests and tourist sites, MRE activities support the goal of **SDG 11** Sustainable cities and communities, and its **target 11.4** on protecting and safeguarding the world's cultural and natural heritage. It also contributes to **SDG 15** Life on land, and its **target 15.2** towards promoting the implementation of sustainable management of all types of forests and **target 15.5** on taking action to reduce the degradation of natural habitats, halt the loss of biodiversity and protect and prevent the extinction of threatened species.

TOOLKIT FOR MIGRANTS, ASYLUM SEEKERS, AND REFUGEES

Each year, BHMIC works with the Armed Forces of BiH to deliver training courses for instructors in order to have more staff able to work on the ground. In addition to teachers, workshops have also been provided for the IOM, the International Committee of the Red Cross (ICRC), commercial companies, and other NGOs working on MRE. This complete training involves learning the norms and standard operating procedures of BHMIC, with participants receiving an official accreditation from BHMIC for MRE.³²⁵

BHMIC also implemented several instructor training courses through partnerships with other organisations over the course of 2021. With the financial support of the ICRC, BHMIC coordinated with the NGO Stop Mines to undergo training for MRE instructors in Pale in September 2021. Participants were able to gain a deeper understanding of the issue, and were then able to effectively communicate this information to the intended audience.³²⁶

Following requests from the IOM, BHMIC has also organised training courses for instructors undertaking MRE activities in migration camps; one such course provided training for 20 instructors in Bihać in November 2021. The training involved practical and theoretical approaches to disseminating messages to migrants in order to prevent potential accidents.³²⁷

BHMIC has organised thematic meetings with regional units of the BiH Border Police as well as NPA, IOM, ICRC, and the Red Cross Society in order to gain knowledge about the movement of migrants, asylum seekers and refugees along potential routes in BiH with the aim of better informing the delivery of MRE. Together with the Border Police, BHMIC jointly reviews and maintains the presence of signs in areas close to migration routes, renewing missing or stolen signs where needed.³²⁸ Furthermore, with migrant routes constantly changing as populations find new solutions to crossing through borders, BHMIC adapts its MRE presentations accordingly. MRE for migrants is conducted through presentations and in the form of public materials like maps and billboard signs.³²⁹



Billboard sign along a forest path delineating mine risk contamination areas. Source: BHM&C



MRE training for migrants conducted by IOM personnel. Source: IOM BiH

Temporary reception centres are located in Sarajevo and Bihać, in addition to many improvised centres used by migrants in transit or while preparing to exit from the country.³³⁰ According to the latest IOM Displacement Tracking Matrix report, there are around 3,400 migrants reportedly staying between five different temporary centres and about 1,700 are living outside. Their lack of knowledge about the most heavily contaminated areas in BiH places this population at great risk. To address this, and as mentioned above, the IOM has organised several training sessions in reception centres for people to learn safe behaviours in relation to avoiding as well as identifying landmines.³³¹ The MRE training for instructors run by BHMACH, also serves to promote the safety of the personnel on IOM mobile teams, who are also exposed to mine risks when locating reception centres in order to provide migrants, refugees, and asylum seekers with assistance and basic necessities.³³²

The IOM also reports that a range of backgrounds exists among the migrant population.³³³ BHMACH is aware of this diversity and has adapted its approach accordingly, to meet their needs in different languages. This has been done through the distribution of materials such as leaflets and posters in English, Arabic, and Farsi, providing critical information about the threats of mines, including a map of mine contaminated areas in Bihać, Cazin and Velika Kladuša.³³⁴

By reducing risks from explosive ordnance for refugees arriving in BiH, MRE further contributes to **SDG 10** Reduced inequalities, and its **target 10.7** on facilitating orderly, safe, regular and responsible migration and mobility of people.



Female deminer from Norwegian People's Aid (NPA) team.
Source: GICHD and Johannes Müller

4. GENDER MAINSTREAMING

FIGURE 20

CONTRIBUTION OF GENDER MAINSTREAMING TO THE SDG TARGETS IN BIH



- 4.4** Increased number of skilled youth and adults
- 4.5** Equal access to all levels of education



- 10.2** Social, economic, political inclusion of all
- 10.3** Equal opportunities, reduction of inequalities
- 10.4** Adoption of social protection policies



- 5.1** End all forms of discrimination against all women and girls
- 5.5** Women's full and effective participation at all levels of decision making
- 5.a** Women's equal rights to economic resources
- 5.c** Strengthened policies and legislation for gender equality



- 16.7** Inclusive, participatory, representative decision-making
- 16.b** Non-discriminatory laws and policies



- 8.5** Full and productive employment and decent work



- 17.17** Effective public, public-private and civil society partnerships

The wording of the SDG targets listed above has been simplified; the full list of targets and their official names can be found on the United Nations website: <https://www.un.org/sustainabledevelopment/>

As emphasised by UN Security Council resolution 1325 on women, peace and security, there is a need for all parties to ensure that mine clearance and mine awareness programmes consider the special needs of women and girls.³³⁵ Consequently, mine action works to improve the impact of interventions on affected women, girls, boys and men from diverse groups.³³⁶

This section focuses on the direct contributions of gender mainstreaming to the Sustainable Development Goals (SDGs). However, it should be noted that, in order to ensure that the overarching principle of leaving no one behind is upheld, gender mainstreaming needs to be implemented and monitored as a cross-cutting approach in all mine action programmes, projects, and activities.

Bosnia and Herzegovina (BiH) ratified the **Convention on the Elimination of All Forms of Discrimination against Women** in 1993 and subsequently its Optional Protocol in 2002.³³⁷ The country then adopted in 2003 (revised in 2010), the national **Law on Gender Equality** which “governs, promotes and protects gender equality and guarantees equal opportunities for all in both public and private domain, and prohibits direct and indirect discrimination on the grounds of gender”.³³⁸ The Law, in addition, defines equal representation of men and women as the presence of at least 40% of either gender in bodies at all levels in BiH (state, entity, cantonal, and municipality levels).

Among the recent national legislative and policy frameworks adopted by BiH in the area of gender equality are the following:

- **Gender Action Plan of Bosnia and Herzegovina 2018–2022.**³³⁹ In order to successfully implement the Law on Gender Equality, in 2018 BiH adopted its now-third Gender Action Plan (2018–2022). The plan serves as a strategic document outlining the goals and measures to achieve gender equality in all areas of life.

- **Action Plan for the implementation of the UN Security Council Resolution 1325 “Women, Peace and Security” in Bosnia and Herzegovina for the period 2018–2022.**³⁴⁰
 The Action Plan also addresses the danger posed by explosive ordnance and the negative socio-economic consequences on affected communities, in the framework of the strategic goal 2 ‘Increased level of human security through the gender equality prism’.
- **Framework strategy for the implementation of the convention on preventing and combating violence against women and domestic violence in Bosnia and Herzegovina for the period 2015–2018.**³⁴¹ The Framework is aimed at effective implementation of the Council of Europe Convention on preventing and combating violence against women and domestic violence.³⁴²
- **Law on Prohibition of Discrimination** in BiH. Adopted in 2009, the Law was amended in 2016 by expanding the prohibited discrimination grounds by explicitly including age, disability, sexual orientation, gender identity and sexual characteristics.³⁴³

Following the provisions of the Law on Gender Equality, BiH established the Agency for Gender Equality of BiH and two gender centres (Gender Centre of the Federation of Bosnia and Herzegovina and Gender Centre of Republika Srpska) at the entity level. These institutional mechanisms are considered governmental bodies and are aimed at promoting and ensuring gender equality and inclusion in BiH.³⁴⁴

The need and importance to ensure gender and diversity is also well reflected in the current National Mine Action Strategy 2018–2025. The Strategy specifically highlights the importance to “reflect various needs of various age and gender groups” and states that “Under the leadership of BHMAC, relevant actors will include gender and diversity into all phases of planning, realisation and follow-up of all mine activities”.³⁴⁵ In addition, the Strategy stresses the significance of gender-sensitive mine action in the realisation of **SDG 5** on gender equality.

While BiH ranked 73rd in the 2020 Human Development Report, the country occupied 38th place in the world in the Gender Inequality Index.³⁴⁶ However, BiH still has a low employment rate (40% for ages 15–64, as of 2020), particularly when it comes to female employment which constituted around 37% in the third quarter of 2021, (ages 15–64).³⁴⁷

Further efforts are also necessary to advance female employment in BiH's mine action sector to meet the 40% target for equal representation. As of June 2021, 25% of the Bosnia and Herzegovina Mine Action Centre's (BHMAC's) employees were female. Moreover, women occupied only 8% in BHMAC managerial / supervisory positions and 10% in operations positions. It is however important to note that two of the three members of the Demining Commission are women.³⁴⁸

Among the international operators, as of 2021, Mines Advisory Group (MAG) employed eight women (10% of total staff) and Norwegian People's Aid (NPA) employed 19 women (15.4%), but female representation is lower among operational staff: 7% for MAG and 8.9% for NPA.³⁴⁹

Both NPA and MAG, however, reported good practices in gender and diversity mainstreaming. Both organisations have gender and diversity related policies and promote gender and diversity in mine action. In addition, they have mixed gender representation in their community liaison teams and conduct consultations with women, girls, men, and boys from different backgrounds to ensure the effectiveness of mine action efforts, especially when it comes to planning and prioritisation activities. In order to ensure women's participation and understand their needs, NPA for instance, organises specific group meetings with women representatives.³⁵⁰

With a view to enhancing its gender and diversity mainstreaming capacities, more than 140 NPA employees received a one-day training session on gender and diversity mainstreaming. More training and further efforts have been planned in the framework of various initiatives, including the recently drafted NPA Implementation Plan for Gender and Diversity.³⁵¹

In addition to this, women have been benefitting from various training courses upon joining mine action organisations. In the case of MAG, the organisation continues to provide training and skill development sessions

for all new employees irrespective of gender. Furthermore, due to the lack of deminers in BiH, in 2021 MAG trained a pool of new deminers that included four women from the country's diverse communities.³⁵²

NPA, in turn, also works on ensuring equal opportunities for women both during the recruitment process and during employment, as well as on improving the work conditions of its female employees. In this context, and starting in 2021, NPA's annual medical checkup was extended to include breast cancer and uterine cervix cancer screenings for all female employees in the organisation. Moreover, the organisation has also actively been recruiting female deminers.³⁵³

When it comes to gender mainstreaming, both MAG and NPA have witnessed how gender considerations in their work have greatly benefitted both mine action and the women involved.

For instance, MAG's experience of including women in their operations demonstrates how women from local communities, based on their knowledge, use of land and appreciation of key landmarks such as trees, cemeteries, and rocks, can provide different and valuable insights and perspectives about the risks in the affected areas. Within this perspective, MAG's work in Ljubljénica and Vozuća is illustrative. In fact, MAG was able to identify additional mine rows solely based on information obtained from interviewing women which "would have otherwise likely not been identified if only men were interviewed."³⁵⁴

Furthermore, women's invaluable participation in mine action has benefitted their own lives. Based on the NPA experience, employment and participation of women in mine action institutions and processes has positively improved their social status and elevated their social position in the country.³⁵⁵

At the same time, in an effort to encompass gender and diversity considerations, both MAG and NPA have been employing representatives from all three ethnic groups (Bosniaks, Croats, and Serbs) in the country and

conducting regular interviews with these ethnic groups. Such efforts have made a significant contribution to facilitating inter-ethnic communication and to promoting dialogue.³⁵⁶

“We are much stronger if we are working all together, from all ethnic groups.”³⁵⁷

Moreover, for the 2022 demining season, NPA has made one of its priorities the inclusion of the Roma population (women and young people) living in the immediate vicinity of mine suspected areas in BiH’s Brčko District. It is envisaged that Roma representatives will be involved in explosive ordnance risk education (EORE) training and data collection activities during the land release process.³⁵⁸

Finally, several examples of partnerships were also identified. For instance, NPA works closely with different women’s and youth associations as well as hunters’ associations focusing on women, particularly when it comes to EORE, in order to effectively promote safe behaviour in the community.³⁵⁹

The 2030 Agenda for Sustainable Development recognises the importance of gender equality and the empowerment of women and girls and their ‘crucial contribution’ to progress across all the SDGs and related targets.³⁶⁰ Gender mainstreaming efforts in mine action in BiH has helped increase female representation and participation contributing to **SDG 5** Gender equality, and its **target 5.1** on ending all forms of discrimination against women and girls, **target 5.5** on ensuring women’s full and effective participation and equal opportunities for leadership at all levels, **target 5.a** on undertaking reforms to give women equal rights to economic and other resources, **target 5.c** on adopting policies for the promotion of gender equality, as well as to **SDG 16** Peace, justice and strong institutions, and its **target 16.7** on ensuring inclusive decision making at all levels, and **target 16.b** on non-discriminatory laws and policies.

By promoting equal employment opportunities and encouraging the recruitment of women, gender mainstreaming has also contributed to **SDG 8** Decent work and economic growth, and its **target 8.5** on achieving full and productive employment and decent work for all. These efforts, coupled with initiatives to engage and promote representatives of different ethnic

groups, have also contributed to **SDG 10** Reduced inequalities, particularly to its **target 10.2** aimed at empowering and promoting inclusion for all, **target 10.3** on ensuring equal opportunities and reducing outcome inequalities, and **target 10.4** on adopting policies to achieve greater equality.

In addition, mine action organisations' efforts to provide skills and training opportunities for their female employees have further contributed to **SDG 4** on ensuring inclusive and equitable education and its **target 4.4** on increasing the number of adults who have skills for employment and decent jobs and **target 4.5** on eliminating gender disparities in education.

Working in partnership with women's and youth associations, mine action has promoted **SDG 17** on partnership and its **target 17.17** on enhancing public, public-private and civil society partnerships.



Board of Donors meeting held in April 2022, organized by the Ministry of Civil Affairs, Demining Commission, BHMACH and UNDP as support. Source: UNDP BiH

5. PARTNERSHIPS AND COOPERATION

FIGURE 21

CONTRIBUTION OF PARTNERSHIPS AND COOPERATION TO THE SDG TARGETS IN BIH



- 4.3** Equal access to technical, vocational and tertiary education
- 4.4** Increased number of skilled youth and adults
- 4.5** Equal access to all levels of education
- 4.7** Universal knowledge to promote sustainable development
- 4.a** Building safe and inclusive learning environments



- 8.3** Support for productive activities and decent job creation
- 8.5** Full and productive employment and decent work
- 8.9** Promotion of sustainable tourism



- 9.1** Equitable access to infrastructure



- 10.7** Safe migration and mobility
- 10.b** Financial flows to States where the need is greatest



- 15.5** Reduce the degradation of natural habitats, halt the loss of biodiversity, and prevent the extinction of threatened species



- 16.6** Development of accountable institutions
- 16.7** Inclusive, participatory, representative decision-making
- 16.8** Strengthened participation of developing countries in institutions of global governance
- 16.a** Strengthened national institutions, including through international cooperation



- 17.3** Access to additional financial resources for developing countries
- 17.6** Access to resources through North-South, South-South and triangular cooperation
- 17.9** Enhanced international support for capacity-building
- 17.16** Enhanced global partnership for sustainable development
- 17.17** Effective public, public-private and civil society partnerships
- 17.18** Capacity-building support to improve access to and quality of data

The wording of the SDG targets listed above has been simplified; the full list of targets and their official names can be found on the United Nations website: <https://www.un.org/sustainabledevelopment/>

As recognised by UN Security Council resolution 2365, partnerships and cooperation are central to the success of mine action, particularly among national authorities, the United Nations, regional organisations, civil society, and the private sector.³⁶¹

Partnerships are voluntary and collaborative relationships in which all participants agree to work together to achieve a common purpose or undertake a specific task, as mutually agreed.³⁶²

In Bosnia and Herzegovina (BiH), partnerships across global, regional, national and local levels have been integral to the country's advancement towards fulfilling its Article 5 obligations under the Anti-Personnel Mine Ban Convention (APMBC). Given the multidimensional, interlinked, and overarching nature of the Sustainable Development Goals (SDGs), no country can achieve them alone, and strong cooperation is needed to realise the 2030 Agenda for Sustainable Development.

The Sustainable Development Cooperation Framework (CF) was adopted by the BiH Council of Ministers at its 22nd Session on 16 December 2020 and confirmed by the BiH Presidency at its 114th Extraordinary Session. The framework serves as a guide for the joint accountability of BiH authorities and the UN system until 2025 to achieve CF priorities in line with the SDGs. It calls for extended cross-sectoral partnerships including among civil society groups, non-governmental organisations (NGOs), community groups, the human rights institutions, academia, media, the private sector, and international partners.³⁶³

The BiH-UN Sustainable Development Cooperation Framework 2021–2025 highlights the role of cooperation across communities as being a vehicle for greater social harmony and reconciliation: "Increased levels of mutual respect, trust and empathy between people and communities across all of BiH will help to address the reconciliation deficit and contribute to greater social cohesion and stability."³⁶⁴

Resource mobilisation and sustainable finance are of particular significance for BiH, since lack of financial means was listed as one of the primary reasons for not being able to fulfill APMBC Article 5 obligations. In addition to this, BiH did not pass the new Law on Mine Action whereby the State would make provision for the mine action sector in the budget.³⁶⁵ As a result, the sector in BiH relies heavily on the mobilisation of external funds.

Results of the UN Development Programme (UNDP) Mine Action Governance and Management Project (MAGMA) have in fact included the re-establishment of the Board of Donors in BiH, which is co-chaired by UNDP and the Ministry of Civil Affairs, to coordinate donor support. Over the course of this project, UNDP has provided technical and capacity development support to mine action authorities to increase transparency and to improve planning and implementation. Initiated in 2017 with a projected end date of 2022, it is funded by UNDP, the European Commission, the Government of BiH, and the Government of Norway.³⁶⁶ It also includes support for the development of the National Mine Action Strategy 2018–2025, jointly with the GICHD. Additionally, it encompasses the development and design of the new mobile application as well as the new information management system for the Bosnia and Herzegovina Mine Action Centre (BHMIC), as mentioned in a previous section.³⁶⁷

Under the Country Coalition project organised by the German Federal Foreign Office, the virtual conference to launch the Country Coalition in BiH took place on 13 October 2020. It included the BiH Demining Commission, BHMIC, international organisations, donors, and expert organisations who participated in two panel discussions on the political and operational aspects and challenges towards a mine-free BiH.³⁶⁸ The aim of the Country Coalition mechanism is to enhance cooperation and assistance in a given country in order to improve the cohesiveness and effectiveness of mine action, including the mobilisation of resources and capacities by, for instance, an increased donor base, as well as setting concrete targets and indicators. The Coalition concept is based on informal coordination meetings lead by the mine affected country with the assistance of a lead donor or donors.

The sections above have highlighted several examples of partnerships, international assistance and cooperation addressing land release, victim assistance, explosive ordnance risk education (EORE), and gender

mainstreaming efforts. This section also focuses on South-South and triangular cooperation in mine action to analyse the outcomes in terms of the SDGs.

South-South cooperation refers to the process whereby two or more developing countries pursue their individual and / or shared national capacity development objectives through exchanges of knowledge, skills, resources and technical know-how, and through regional and interregional collective actions, including partnerships involving governments, regional organisations, civil society, academia and the private sector, for their individual and / or mutual benefit within and across regions. South-South cooperation is not a substitute for, but rather a complement to, traditional North-South cooperation.³⁶⁹

Triangular cooperation is the collaboration in which traditional donor countries and multilateral organisations facilitate South-South initiatives through the provision of funding, training, management and technological systems as well as other forms of support.³⁷⁰

Cooperation between BHMIC and international stakeholders for the implementation of mine risk education (MRE) activities have resulted in a standardised approach to EORE. As previously mentioned, BHMIC is responsible for the accreditation of organisations involved in MRE and instructors must also gain certification through an MRE national accreditation instructor course.^{371 372} Implementing actors involved include the Armed Forces of BiH, the multinational European Union Force in BiH (EUFOR), the Federal Administration of Civil Protection, Civil Protection RS, Norwegian People's Aid (NPA), the Red Cross in BiH, the International Organization for Migration (IOM), and the NGO Posavina Without Mines.³⁷³ This partnership on the international, national, and regional levels in mine

action, has in turn increased the potential for exchanges of knowledge, expertise, innovation, and technology. For instance, following BHMAC accreditation, EUFOR cooperates with 13 ministries of education in BiH in order to provide education on safe behaviour.³⁷⁴



International Day for Mine Awareness and Assistance in Mine Action event on 4th April 2022, jointly organised by the BHMAC and NPA in the Brčko District. Source: UNDP BiH

This approach has allowed for a wider scope in knowledge dissemination, maximising the reach of quality education to a range of target groups throughout BiH. Partnership for MRE activities also extends to providing education to migrants, refugees, and asylum seekers in reception centres, as previously noted. Through cooperation with BHMAC, up-to-date and relevant contextual information about the mine contamination situation in BiH can efficiently be shared with instructors across partnering organisations and disseminated.

These coordinated efforts and knowledge sharing help to further promote safe mobility not only for populations at risk, but MRE personnel themselves, particularly contributing to **SDG 10** on reducing inequalities within and among countries and its **target 10.7** on facilitating safe migration and mobility of people.

Partnerships related to victim assistance include the ITF Enhancing Human Security³⁷⁵ humanitarian mine action project in 2021 which implements a survivor's rehabilitation programme focusing on civilian mine victims and relies upon local implementation partnerships. Thanks to this cooperation, 20 prostheses were manufactured during May and June 2021, including prostheses for three members of the BiH Paralympic Team in sitting volleyball, competing in the Paralympic Games in Tokyo. The technical capacity has meant that high quality prosthetic limbs are able to be matched with the particular needs of each mine victim, enhancing comfortable mobility and quality of life. This tailored approach has proven to be the most effective means of assisting mine / unexploded ordnance (UXO) victims.³⁷⁶

In the spring of 2020, the EU-funded project 'Communities of Different but Equal Citizens' was initiated through a partnership between UDAS, the Helsinki Citizens' Assembly Banja Luka, and the Association 'Something More'. In order to facilitate access to information and to alleviate the impact on mental health of home isolation for persons with disabilities due to the Covid-19 pandemic, two types of peer support groups were established: peer support groups for mine victims in 13 municipalities³⁷⁷ and peer support groups for women with disabilities in four municipalities.^{378 379}

The joint project of the Organization of Amputees Republike Srpske (UDAS) and World Vision 'Integrated socio-economic support for landmine victims in BiH' (2017–2019) strengthened community-based rehabilitation (CBR) programmes in local communities³⁸⁰ in addition to facilitating opportunities to learn vocational skills that would support the livelihood of survivors and their families.³⁸¹ The increased capacities resulting from this project facilitated a wide-ranging mobilisation of knowledge sharing through multidisciplinary approaches. Programmes included training across a range of vocational and skill-building areas.

This partnership contributes to **SDG 4** Quality education, and its **target 4.4** on increasing the number of adults who have relevant technical and vocational skills for employment, decent jobs, and entrepreneurship, and **target 4.7** on universal knowledge to promote sustainable development.

The unique combination of knowledge which is achieved through partnership has presented multidimensional impacts on both the individual and community levels. In July 2021, ITF in partnership with UDAS and the Beekeeping Academy of Slovenia,³⁸² initiated a pilot mine victim assistance project 'Beekeeping as an Empowerment Tool for People with Disabilities from BiH'. A three-day training programme was held in Slovenia for Bosnian victims. Led by professional beekeepers, the programme hosted 30 survivors and their families. It provided them with educational tools to understand how to breed queen honeybees, which could then be applied in establishing a stable household income through beekeeping, given that only minimal start-up investment and technical know-how is required. The project is a departure point for the growth of individual businesses and to sell a range of products like honey, propolis, and beeswax candles. By promoting mine victims' livelihood and skills, the project also supports the psycho-social rehabilitation of affected individuals, fostering increased connection with one's community by means of running one's own business and more broadly supporting environmental conservation efforts towards preserving biodiversity.³⁸³

The creative and resourceful application of knowledge through this partnership contributes to the fulfillment of **SDG 15** Life on land, and its **target 15.5** on halting the loss of biodiversity and the extinction of threatened species through the protection of bees. The collaboration further links to **SDG 8** Decent work and economic growth, and its **target 8.3** on development-oriented productive activities, resource efficiency, and the decoupling of economic growth from environmental degradation as well as **target 8.5** on decent work.

By joining forces with professionals from the Beekeeping Academy of Slovenia to facilitate vocational training for mine victims and their families, and with additional plans to continue the project in 2022 with additional beeswax-candle-making workshops for women,³⁸⁴ the project further supports **SDG 4** Quality education, and its **target 4.3** on ensuring equal access to vocational and other education, **target 4.4** on increasing the number of adults who have skills for employment and decent jobs, **target 4.5** on eliminating gender disparities in education and ensuring equal

access to all levels of education and vocational training for the vulnerable, including persons with disabilities, and **target 4.a** on providing safe, non-violent, inclusive, and effective learning environments for all.

Thanks to the Mine Free Sarajevo project implemented by ITF, in partnership with the Mine Detection Dog Center in Bosnia and Herzegovina and the Marshall Legacy Institute, the area of Sarajevo and four of its municipalities³⁸⁵ are now free of mines and explosive remnants of war (ERW), and safe for the local population. The project was launched in April 2019 and completed in May 2021 with the support of funding from the United States as well as the assistance and support of local authorities, especially BHMAL, the Armed Forces of BiH and the Federal Administration of Civil Protection, the mayors of individual municipalities, and the mayor of the City of Sarajevo. This project has resulted in the creation of economic and employment opportunities as the areas become a more welcoming environment to citizens of BiH and visiting tourists.³⁸⁶

The ‘Sava and Drina River Corridors Integrated Development Program’ is a project which involves the demining of 40 km of the right bank of the Sava River and is funded by the Western Balkans Investment Framework (WBIF).³⁸⁷ With its projected scope from 2021–2023, the project is supported through a partnership between the Ministry of Finance and Treasury, the Ministry of Communications and Transport, Federal Ministry of Transport and Communications, the Ministry of Transport and Communications of Republika Srpska, Brčko District government, and BHMAL. In addition to a navigable waterway, the results will include lower emissions and low-cost modes of transport, reduction of pollution levels (estimated at a reduction of more than 200,000 tonnes of CO² emissions in 2024–2050), facilitation of trade flows with countries in the region, and increased job opportunities, agricultural production, tourism and energy generation.³⁸⁸

Partnerships for land release have resulted in the transition to areas becoming mine free, including through the enablement of critical infrastructure projects. In doing so, they contribute to **SDG 8** and its **target 8.9** on promoting sustainable tourism that creates local jobs, as well as **SDG 9** Industry, innovation and infrastructure, and its **target 9.1** on developing sustainable infrastructure to support economic development.

Through this multi-stakeholder engagement and partnerships at different levels, mine action outcomes are closely linked to **SDG 17** Partnerships for the Goals and its **target 17.3** on mobilising financial resources for developing countries, **target 17.6** on enhancing all types of cooperation and knowledge sharing on mutually agreed terms, **target 17.9** on enhancing international support and supporting capacity building to implement all the SDGs, **target 17.16** on enhancing the global partnership for sustainable development, **target 17.17** on enhancing public, public-private and civil society partnerships, and **target 17.18** on capacity building support to increase the availability of high-quality, timely, reliable, and disaggregated data.

By promoting governance and strengthening institutional accountability towards both donors and beneficiaries, mine action has also contributed to **SDG 16** Peace, justice and strong institutions and its **target 16.6** on developing effective, accountable and transparent institutions, **target 16.7** on participatory and representative decision making at all levels, **target 16.8** on broadening participation of developing countries in institutions of global governance, and **target 16.a** on strengthening relevant national institutions including through international cooperation, for building capacity at all levels.

As a result of these partnerships and exchanges, mine action has contributed to **SDG 10** on reduced inequalities and to its **target 10.b** on encouraging official development assistance and financial flows.

CONCLUSIONS

The Bosnia and Herzegovina case study provides clear evidence of the impact that mine action has on sustainable development at different levels, by reducing the risks faced by local communities affected by the presence of explosive ordnance (EO).

The Sustainable Development Goal (SDG) framework enabled the identification of mine action's direct contribution to 15 SDGs and to at least 60 of their targets in Bosnia and Herzegovina, benefitting the five critical dimensions of the 2030 Agenda: partnership, peace, people, planet, and prosperity.

Considering the pressing humanitarian, socio-economic and safety challenges faced in the aftermath of the war, the study provides evidence on how the design and implementation of integrated humanitarian mine action and development programmes has the potential to better reach both humanitarian, development and peace outcomes, and therefore for mine action to be more impactful than when undertaken in a silo, ensuring its relevance in the medium and long term.

After almost three decades since the signature of the Dayton Peace Agreement (DPA), the study sheds light on mine action's enabling role for housing reconstruction programmes while identifying the need for improved alignment and coordination between involved actors for these programmes to be more successful and sustainable. For instance, the findings of the study demonstrate that as a result of insufficient coordination, some underlying factors, such as ethnic power dynamics or immediate socio-economic needs, were overlooked as part of housing reconstruction efforts after clearance. In turn, this led to limited voluntary return and reintegration of minority groups.

Similarly, the study also highlights the importance of partnerships and articulated approaches with key stakeholders in explosive ordnance risk education (EORE) and victim assistance efforts, noting the relevance of coordinated interventions to ensure safe human mobility through proper EORE for the most vulnerable, including migrants, refugees, and asylum seekers.

In recent years, mine action has also proven to be a key contributor to sustainable development by enabling flood prevention measures, access to natural resources, productive use of land, economic growth, infrastructure, and tourism. In addition, released forested land has been essential for sustainable forest management to occur, helping to reduce the effects of climate change and environmental degradation while promoting the quality of forest health, livelihoods, and sustainable tourism in the long term.

Given its comprehensive scope, the SDGs can serve as a framework to strengthen cross-cutting policy coherence, evidence-based planning, reporting, and data collection to help integrate mine action activities into national SDG efforts while enhancing their visibility and funding opportunities.

The continuous refinement of methodical analyses of existing and potential mine action outcomes will help to strengthen the evidence of the sector's role in fostering the triple nexus by contributing to broader humanitarian, development, and peace initiatives, in support of collective outcomes and the 2030 Agenda for Sustainable Development.

ENDNOTES

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Geneva International Centre for Humanitarian Demining (GICHD)

Maison de la paix, Tower 3, Chemin Eugène-Rigot 2C

PO Box 1300, CH – 1211 Geneva 1, Switzerland

info@gichd.org

gichd.org

