INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN BUSINESS & SOCIAL SCIENCES

Vol 16, Issue 1, (2026) E-ISSN: 2222-6990

Local and International Efforts to Eliminate Landmines in the Arab World and the Challenges they Face

Ahmed Saeed Ali Lahha Alshehhi, Mohammad Naqib Bin Hamdan

Academy of Islamic Civilization, Faculty of Social and Islamic Sciences, Universiti Teknologi Malaysia, Malaysia

Email: uae-rak85@hotmail.com, mohammadnaqib@utm.my

DOI Link: http://dx.doi.org/10.6007/IJARBSS/v16-i1/27488

Published Date: 25 January 2026

Abstract

The problem of landmines is considered one of the most escalating humanitarian and security challenges in the Arab world as a result of successive wars from the Second World War until the present day. Landmines are spread over areas estimated at tens of thousands of square kilometres, and their number reaches tens of millions of mines and explosive devices. This study seeks to evaluate and analyze the effectiveness of international and national efforts aimed at mine clearance, while also examining the role that Islamic law can play in promoting social awareness and supporting the prohibition of their use. The study adopts a descriptive, analytical, and comparative methodology through an examination of official statistics issued by United Nations reports concerned with mine action and a comparison of these data with reports issued by affected Arab states, with the aim of identifying gaps and common challenges. The findings show that Arab countries suffer annually from thousands of victims and financial losses estimated at billions of dollars as a result of clearance operations and the disruption of agricultural land and infrastructure. The analysis also reveals a clear slowdown in the pace of demining in most affected countries due to a lack of funding, limited technical capabilities, and the continuation of security threats in conflict areas. From a Sharia perspective, the study demonstrates that the objectives of Islamic law, especially the protection of life and property, provide a strong foundation for supporting the ethical and jurisprudential prohibition of landmine use and encourage the financing of clearance programs, as well as the care and rehabilitation of victims.

Keywords: Landmines, Improvised Explosive Devices (IEDs), the Ottawa Convention (Mine Ban Treaty), the Objectives of Islamic Law (Maqasid al Sharia)

Introduction

Landmines are among the most dangerous remnants of war, with effects that continue to threaten civilian lives for decades after the cessation of military operations. Across many Arab

countries, vast areas remain contaminated with landmines as a result of prolonged armed conflicts, leading to persistent injuries and fatalities among civilians, displaced persons, and returnees. Beyond their immediate humanitarian toll, landmines severely obstruct post-conflict recovery by hindering reconstruction efforts, agricultural activities, land reclamation, and investment. Clearance operations impose enormous financial burdens and require extended timeframes, particularly in states facing limited technical capacity and ongoing security instability. Recent international reports confirm that several Arab countries remain among the most heavily affected by landmine contamination worldwide due to the accumulation of unresolved conflicts and insufficient clearance progress (ICBL, 2025).

The gravity of the landmine problem extends beyond humanitarian concerns to encompass profound economic, social, and security consequences. Restricted population movement, disrupted trade routes, and reduced access to arable land undermine prospects for sustainable development, while health and social systems face increasing pressure to provide long-term medical care, rehabilitation, and social support for victims (Abdullah, 2024). Despite growing international attention to mine action, existing studies on landmines in the Arab world have largely focused on technical clearance operations or humanitarian impacts in isolation. There remains a notable lack of comprehensive interdisciplinary research that integrates humanitarian, economic, legal, and ethical perspectives within a unified analytical framework.

From a value-based standpoint, the objectives of Islamic law (maqasid al-shariah) align closely with the principles of international humanitarian law, particularly in their shared emphasis on the protection of human life, the preservation of dignity, and the prevention of harm. Islamic legal principles prohibit injury to civilians and stress the obligation to remove sources of harm and prevent foreseeable damage. However, contemporary academic literature has paid limited attention to examining landmine contamination through the lens of Islamic legal objectives, especially in relation to sustainable development and human security. This gap is particularly significant in the Arab context, where Islamic legal and ethical frameworks play an important role in shaping public policy, social values, and legal discourse.

Accordingly, this study is justified by the urgent need to bridge this research gap through a comprehensive analysis that situates the landmine problem in the Arab world at the intersection of humanitarian impact, economic development, international legal obligations, and Islamic legal ethics. By doing so, the study contributes original value to existing scholarship and provides a normative framework that can enhance policy relevance and regional applicability. The study seeks to analyze the current state of landmine contamination in the Arab world by identifying the most affected countries and assessing the associated humanitarian and economic impacts. It further evaluates national and international mine action efforts, including clearance operations and victim assistance programs, while examining the principal challenges that undermine their effectiveness. In addition, the study offers an analytical legal perspective grounded in the objectives of Islamic law, demonstrating how existing and future mine action strategies can be aligned with these principles. Ultimately, the study proposes a set of practical, policy-oriented recommendations aimed at strengthening mine action effectiveness and advancing human security and sustainable development in Arab countries.

Research Methodology

This study adopts a systematic review methodology to analyze the landmine problem in the Arab world and to examine international, regional, and national responses, alongside a legal analysis emphasizing the protection of life and property and the prohibition of harm to civilians. Given the multidimensional nature of the topic, the research draws on reliable secondary sources that address humanitarian, legal, economic, and ethical dimensions. The descriptive analytical method is employed to organize and interpret the collected data, while the comparative method is used to examine the experiences of the most affected countries, namely Egypt, Iraq, Syria, Yemen, Sudan, Libya, Lebanon, Jordan, and Kuwait. These cases are selected based on recent international reports indicating high levels of landmine contamination and significant humanitarian impact.

The study relies exclusively on secondary data, consistent with the requirements of a systematic review. Sources include recent international reports such as the Landmine Monitor and publications by the United Nations Mine Action Service (UNMAS), as well as the Ottawa Convention and relevant international protocols on conventional weapons. In addition, official governmental reports issued by national mine action authorities are consulted to obtain verified data on contaminated areas, victim statistics, and clearance rates. The research also incorporates jurisprudential and doctrinal sources addressing the objectives of Islamic law, alongside peer-reviewed academic studies examining the socio-economic consequences of landmines and contemporary mine action strategies. Data analysis is conducted through qualitative content analysis to identify recurring themes and structural challenges, complemented by thematic analysis of legal texts and policy documents. Descriptive statistics are used to present quantitative indicators related to landmine prevalence, victim numbers, and annual clearance progress, as reported in international databases and United Nations sources.

Landmines

Landmines of all types are considered among the most dangerous remnants of contemporary warfare, as they continue to have long term effects on human security and development in many countries. These mines are divided into two main categories: anti-personnel mines, which are designed to cause severe injury or death upon contact and are prohibited internationally under the Ottawa Convention, and anti-vehicle mines, which are planted to disable heavy military vehicles and require much higher pressure to be activated. However, the field situation over the past two decades has shown a growing use of improvised explosive devices, which are often planted in ways similar to traditional mines and are characterized by their difficulty of detection and high injury rates. They have become one of the most serious threats to civilians and humanitarian workers (ICBL, 2024).

The motives for planting and spreading landmines vary. They are used for tactical purposes such as slowing enemy advances, protecting military positions, and controlling access to strategic areas. Nevertheless, these uses leave long lasting consequences that extend far beyond the duration of war. International estimates indicate that between 57 and 60 countries and regions worldwide remain contaminated by landmines, and that the total number of mines planted globally ranges between 60 and 110 million. These figures reflect the scale of the global challenge posed by this problem (APOPO, 2024). The Arab region occupies a prominent position on the global map of landmine contamination. Some studies

estimate that up to 40 percent of the world's landmines are located in Arab countries alone, amounting to approximately 44 million mines. This is the result of the accumulation of regional wars, their prolonged duration, and the complex geography of conflicts in countries such as Egypt, Iraq, Yemen, Sudan, Libya, and Syria.

From a legal perspective, the Convention on the Prohibition of Anti-Personnel Mines, known as the Ottawa Convention, constitutes the most important international framework for addressing this issue. By 2024, the number of States Parties had reached 164 (Lords Library, 2024). However, 33 states remain outside the scope of the Convention, including several of the largest producers and users of landmines such as the United States, Russia, China, India, Pakistan, and Iran (Arms Control Association, 2024). This situation contributes to the continued production and use of these weapons. In the Arab world, fourteen out of twenty-two states, approximately 63.6 percent, have ratified the Convention, while key countries such as Egypt, Libya, Saudi Arabia, Syria, and Oman have refrained from joining it. This reflects differing assessments of legal obligations and security considerations associated with this issue.

Taken together, these data reveal the scale of the challenges facing countries in the region and around the world in addressing the landmine problem, whether in terms of their widespread presence and the complexity of their removal or the international legal framework that still suffers from structural gaps due to the non-commitment of a number of major states. This makes landmines one of the most urgent issues in the context of human security and sustainable development.

The Effects of Landmines and Methods of Detection, Clearance, and Control from Legal and Technical Perspectives

Landmines and explosive remnants of war continue to cause alarming human and economic losses at the global level. In 2023, the number of casualties rose significantly to 5,757 cases, representing an increase of approximately 2 percent compared to 2022. The global cost of clearance operations exceeds one billion dollars annually, reflecting the scale of the financial and logistical burden borne by affected states. Statistics indicate that civilians constitute the majority of victims, accounting for 84 percent, while children represent 37 percent of civilian casualties. This highlights the indiscriminate and non-discriminatory nature of these internationally prohibited weapons (MAG, 2024; ICBL CMC, 2024).

Landmine Monitor data for 2024 show that Myanmar, Syria, Afghanistan, Ukraine, and Yemen are among the countries with the highest numbers of landmine related injuries, with annual casualties ranging between 500 and 1,000. In the Arab world, the number of injuries exceeds 1,500, concentrated mainly in Syria, Yemen, and Iraq. This represents nearly one quarter of global casualties, reflecting the depth of the crisis in the region and the persistence of conflicts that keep these risks alive. The effects of landmines are not limited to direct human losses but extend to wide ranging economic and developmental damage. They isolate large areas of arable and investment ready land, obstruct infrastructure projects, and increase the costs of living and food security. For example, annual losses resulting from landmine contamination in Ukraine are estimated at approximately 11.2 billion dollars, equivalent to 5.6 percent of its pre war gross domestic product. This illustrates the scale of economic depletion caused by these remnants on state resources and productive capacity.

In response to this reality, there is an urgent need to develop advanced technologies for landmine detection and clearance. Traditional detection methods such as metal detectors remain widely used despite their limitations and the high rate of false alarms they produce. In contrast, there is growing reliance on more advanced technologies such as ground penetrating radar capable of detecting non-metallic plastic mines, as well as trained dogs that can track explosive materials with high sensitivity. Recent innovations have also integrated unmanned aerial vehicles equipped with thermal and magnetic sensors and artificial intelligence systems capable of analyzing data and producing accurate maps of suspected areas, thereby enhancing the speed and accuracy of survey operations (UNMAS, 2023).

With regard to clearance, manual demining remains the safest option in geographically complex areas, although it is the slowest and most dangerous for expert teams. It is complemented by mechanical techniques such as mine clearing machines and controlled detonation of explosives, in addition to remotely operated robots that have helped reduce direct risks to personnel. This diverse set of methods forms a necessary combination for achieving effective clearance operations adapted to different field environments and levels of contamination. Collectively, these data illustrate the complexity of the landmine issue, which combines direct humanitarian impact, heavy economic burdens, and technical challenges in detection and clearance. This makes it one of the central الملفات in efforts to promote human security and sustainable development (Zoubi, 2023).

Arab Experiences in Landmine Clearance

The Jordanian Experience

The planting of landmines in Jordan dates back to the 1967 war, when extensive minefields were laid to protect Jordanian borders from Israeli attacks. These minefields are concentrated primarily in the Jordan Valley and the Ghor areas, which are among the most contaminated regions, extending along the western border with occupied Palestine in addition to parts of the eastern desert. The Jordanian government began clearance operations after 1993, and the pace accelerated following Jordan's accession to the Ottawa Convention banning anti-personnel mines in 1998. The affected areas covered approximately 60 square kilometers, most of which were fertile agricultural lands in the Jordan Valley, containing nearly 300,000 mines. The majority of these mines were cleared before 2025 (NCDR, 2025).

Jordan achieved a major milestone by declaring its territory free of anti-personnel landmines in April 2012, with a completion rate approaching 100 percent for this category of mines. The total cost of clearance programs exceeded 135 million dollars, according to some estimates that include international assistance and national budget allocations. Current annual costs for coordination and survey programs are estimated at between 1.8 and 4.2 million dollars. The total number of victims since 1967 ranges between 452 and 1,843. In recent years, the number of injuries has declined to between zero and three cases annually, most of which are related to unexploded ordnance. In the past, landmines deprived large areas of fertile agricultural land from use, obstructing agricultural and tourism development and causing annual economic losses of millions of dollars prior to clearance operations.

The Kuwaiti Experience

Kuwait has made significant progress in clearing its territory of landmines, placing it among the countries that are close to completing this file. The main causes of contamination date

back to the Iraqi occupation, during which Iraqi forces planted massive quantities of landmines to defend strategic positions and oil installations. The liberation war in 1991 also left large amounts of unexploded ordnance that failed to detonate upon impact. Russian made TM 62 mines constitute a large proportion of the remaining contamination. Minefields are concentrated mainly in the northern and western desert regions, especially along the border with Iraq and around oil fields and former military installations. The total affected area was initially estimated at between 1,800 and 2,100 square kilometers.

Initial clearance operations began immediately after liberation in 1991 with the assistance of coalition forces and later continued under the supervision of the Kuwait Mine Action Authority in cooperation with the United Nations. Kuwait has succeeded in removing and destroying more than 1.68 million mines and items of ordnance since the start of operations, achieving a clearance rate of more than 95 percent in high risk areas and key economic sites. Remaining contaminated areas are estimated at approximately 10 to 20 square kilometers, mostly in remote and uninhabited border regions.

The Kuwaiti government aims to officially declare the country mine free by the end of 2025 or 2026, taking into account the difficulties of working in shifting sandy environments (Jassim and Al Shammary, 2022). The total number of victims since 1991 is estimated at around 1,700 injuries, most of which occurred during the first decade after liberation. The annual injury rate has now declined to nearly zero, falling below three cases per year due to awareness programs and continuous campaigns. The total cost of the Kuwaiti program has exceeded 500 million US dollars, with some estimates reaching approximately 820 million dollars. These costs include survey operations, clearance, ordnance destruction, and victim assistance. While landmine contamination initially had a major social and psychological impact, its effects are now limited as a result of comprehensive clearance. Economically, clearance operations have enabled the reuse of vast areas for oil, agriculture, and urban development, removing a major obstacle to national growth (SafeLane Global, 2019; UNMAS, 2023).

The Egyptian Experience in Dealing with Landmines

Egypt is considered one of the most heavily affected countries in the world by landmine contamination, with estimates indicating that mines on its territory account for approximately 20 percent of the global total (Khamis, 2021). The roots of the problem date back to World War II, when German, Italian, and British forces planted millions of mines in the Western Desert and along the north western coast around El Alamein and Marsa Matrouh. Additional contamination resulted from successive Arab Israeli wars in the Sinai Peninsula and areas adjacent to the Suez Canal.

Landmines in Egypt include both anti-tank mines such as German Teller mines and British MK mines, which are the most widespread, as well as anti-personnel mines. The total number of mines is estimated at around 22 million, distributed over an area of approximately 2,680 square kilometers. Organized clearance operations began under the Egyptian Armed Forces in the 1980s, followed by the establishment of the Egyptian National Center for Mine Action in 2007 to coordinate national and international efforts, particularly within the framework of the United Nations Development Programme.

Between 1.2 and 3 million mines and unexploded ordnance had been destroyed or removed by 2024, focusing on economically prioritized areas in the north western coast and Sinai. This represents only about 5 to 13 percent of the total estimated contamination. At the current pace and level of funding, full clearance is expected to require at least two to three more decades and may extend until 2045 (Mine Action Review, 2021).

The Egyptian government has recorded nearly 10,000 injuries since the 1940s, most of them among civilians. The current annual injury rate ranges between 10 and 30 cases, mainly among fishermen, shepherds, and scrap metal collectors. The cost of clearance is estimated at between 3 and 10 billion US dollars, representing a major burden on the state budget and on development programs related to land reclamation and economic use.

The Iraqi Experience

Iraq is the second most contaminated Arab country after Egypt, in addition to the widespread presence of improvised explosive devices left by recent conflicts. Contamination is the result of successive wars, particularly the Iran Iraq war, which left minefields along the eastern border, followed by internal conflicts and the war against ISIS that led to extensive use of improvised explosive devices in liberated urban areas such as Nineveh, Anbar, and Salah al Din. Some estimates place the contaminated area at approximately 2,100 square kilometers. Organized mine action operations began after 2003 with the establishment of the Directorate of Mine Action and intensified after 2017 to address the legacy of improvised explosive devices. In 2022, tens of thousands of conventional mines and unexploded ordnance were reported destroyed (Munition Monitor, 2023), and approximately 60 percent of contaminated areas had been cleared according to some reports (Al Arabi Al Jadeed, 2024). Full clearance is expected to require an additional 20 to 30 years, depending on sustained funding and international support (Noon Post, 2024; UNMAS, 2024).

The total number of landmine and explosive remnants victims in Iraq exceeded 30,000 according to a 2022 report by the Iraqi Directorate of Mine Action, while other sources indicate that the number reached 34,249 victims between 2003 and 2024. The Iraqi government faces particular difficulty in dealing with improvised explosive devices, whose removal may cost up to six times more than the clearance of conventional mines (Humanity, 2021). International funding has declined in recent years, threatening the pace of operations. Landmines and explosive devices hinder the return of millions of displaced persons (Othman and Karim, 2021; Humanity and Inclusion, 2022) and prevent the use of vast agricultural areas, resulting in indirect economic losses estimated in the billions and negatively affecting food security (HALO Trust, 2023).

The Syrian Experience

The main reason for the widespread contamination by landmines and improvised explosive devices in Syria is the ongoing armed conflict since 2011. All warring parties have used mines and improvised explosive devices extensively and indiscriminately for defensive and offensive purposes, especially in urban areas (HRW, 2025). Most of the existing mines are of Russian origin, alongside locally manufactured devices. Contamination is present in all areas that witnessed fighting, with heavy concentration in major battle zones.

Contaminated areas are estimated at between 1,000 and 12,000 square kilometers, with an estimated 2 to 15 million mines and explosive devices (IMAS, 2025). Since 2014, between 200,000 and 1.2 million mines and unexploded ordnance have been destroyed. This represents only 5 to 15 percent of the known contaminated area, while new mines and devices continue to be planted in some regions. At this rate, Syria will require between 15 and 50 years to recover from contamination, provided that security stability is achieved and sufficient international funding is available (Hamad, 2022; HALO Trust, 2024).

Syria is currently one of the Arab countries with the highest numbers of landmine injuries, with more than 13,000 casualties recorded since 2011 and annual injuries ranging between 900 and 1,500 in recent years. Annual funding requirements for clearance and awareness programs range between 50 and 85 million US dollars, with total expected costs exceeding 4 billion dollars over the coming decades (HRW, 2023). Landmines hinder the return of millions of displaced persons and refugees, with an estimated 4.2 million internally displaced. They also obstruct safe access to schools and hospitals and increase the burden on the health system due to the need for long term care and rehabilitation for thousands of persons with permanent disabilities (Abu Raya and Qasem, 2021). In agriculture and food security, landmines prevent the use of large areas of fertile land, especially in the Euphrates Valley, leading to economic losses estimated in the billions annually and exacerbating food insecurity. They also delay or increase the cost of reconstruction and infrastructure projects by up to 20 to 30 percent in contaminated areas, deepening the economic recovery crisis (SNHR, 2023).

The Lebanese Experience

Landmine contamination in Lebanon dates back to two main periods, the Lebanese civil war from 1975 to 1990 and the Israeli occupation of southern Lebanon from 1978 to 2000. Lebanon launched systematic mine action efforts with the establishment of the Lebanese Mine Action Center in 1998 following the signing of the Ottawa Convention banning anti-personnel mines (Al Zubairi, 2021). Mines are concentrated in former strategic areas and border regions in southern Lebanon, the Bekaa Valley, Mount Lebanon, and northern regions. The contamination includes Russian made PMN mines and Israeli manufactured ordnance. At the peak of contamination, more than 150 square kilometers of land were affected, with some sources suggesting higher figures. LMAC data indicate that more than 450,000 items of ordnance, including landmines and cluster munitions, have been destroyed since 2000. Clearance rates for confirmed or suspected areas range between 80 and 90 percent, although estimates of remaining areas vary between 30 and 64 square kilometers Lebanon requested an extension of its clearance deadline under the Convention, as it requires an additional 10 to 15 years to complete clearance. The total number of victims since 1975 exceeds 3,700, including more than 1,100 fatalities. Annual injuries have declined significantly due to clearance and awareness efforts, from 50 to 80 cases per year before 2006 to approximately 10 to 40 cases per year currently. Children under 18, shepherds, and farmers are the most vulnerable groups. The cumulative cost of clearance since 2000 is estimated at approximately 247 million US dollars, with current annual costs ranging between 8.5 and 30 million dollars and heavy reliance on international funding. The average cost of clearing one square kilometer is about 450,000 dollars. Lebanon faces major challenges due to economic collapse, with annual economic losses from the inability to use contaminated agricultural land

estimated at around 85 million dollars, in addition to the obstruction of tourism investment, especially in the south (Life of Mine, 2019).

The Sudanese Experience

Sudan, a State Party to the Ottawa Convention since 2003, faces major challenges due to widespread contamination by landmines and explosive remnants of war. This contamination is the result of successive civil wars, including the north south conflict, the Darfur conflict, and the conflicts in South Kordofan and Blue Nile, as well as the ongoing war until 2023, which introduced mines and improvised devices into urban areas such as Khartoum Minefields are concentrated in major conflict zones in Darfur from 2003 to 2023 and continue to the present, including anti-personnel mines and improvised explosive devices. Mines are also found in South Kordofan and Blue Nile along main roads and border areas, dating back to the pre 2005 civil war, as well as in eastern regions and parts of Khartoum due to recent fighting. Suspected contaminated areas are estimated at between 1,000 and 1,850 square kilometers. Between 100,000 and 200,000 mines and items of ordnance have been destroyed, with clearance rates of approximately 35 to 60 percent of confirmed areas. However, the latest conflict has restored contamination levels to conditions similar to earlier stages. The total number of victims since 1999 exceeds 28,500. Injuries had been declining before 2023 but rose again in 2022 to 283 cases. After the 2023 conflict, injuries increased in urban areas, with children and women accounting for approximately 40 to 58 percent of casualties. Depending on funding and security conditions, full clearance may require between 15 years in an optimistic scenario and 40 years under continued constraints. Total required funding is estimated at between 500 and 700 million dollars, while recent annual costs are approximately 20 million dollars, with a funding gap exceeding 75 percent.Key obstacles include the continuation of civil war, reduced funding, ongoing planting of mines and improvised devices by warring parties, and weak accountability mechanisms. Landmine contamination severely restricts sustainable development, with annual agricultural productivity losses estimated between 100 and 200 million dollars and total annual losses reaching up to 1.2 billion dollars. Mines prevent the use of approximately 450,000 hectares of land, worsening food insecurity and hindering the return of millions of displaced persons. Despite previous clearance efforts, ongoing conflicts have prevented the achievement of planned objectives, leading to severe humanitarian and economic losses. This confirms that international legal commitment alone is insufficient without sustainable funding and effective accountability mechanisms for parties that continue to lay mines (UNMAS, 2024).

The Yemeni Experience

The landmine problem re-emerged sharply in Yemen after 2014, with the widespread planting of locally manufactured mines and improvised explosive devices in clear violation of international law, despite Yemen being a State Party to the Ottawa Convention. Clearance operations began in 2015 and intensified after 2017 with regional and international assistance, particularly in liberated areas. The number of victims since 2014 has reached approximately 11,000, with annual casualties ranging between 500 and 900. Contaminated areas are estimated at around 2,900 square kilometers, with relatively low clearance rates compared to the scale of contamination. Clearance costs amount to millions of dollars in a context of extreme economic and humanitarian fragility. Landmines currently hinder the return of displaced persons and prevent the use of agricultural land, while the country suffers

from high levels of food insecurity and famine in some regions (UNDP Yemen, 2023; Masam Project, 2023).

The Libyan Experience

International institutional efforts to address landmine contamination in Libya began in 2011 with the deployment of the United Nations Mine Action Service, which was later integrated into the United Nations Support Mission in Libya in July 2012. The Libyan Mine Action Center was established in 2012 to coordinate national and international efforts. LibMAC identified more than 678 square kilometers as hazardous areas suspected of contamination, while other United Nations estimates indicate that approximately 444 million square meters remain contaminated.

Current contamination is heavily concentrated in urban areas that witnessed intense fighting, particularly in the southern suburbs of Tripoli, as well as Sirte, Benghazi, Derna, and eastern and western border regions also affected by World War II remnants. Contamination includes anti-personnel and anti-tank mines, but the greatest danger comes from improvised explosive devices that spread widely during the 2019 to 2020 Tripoli battles, where they were planted in non-conventional ways inside homes, hospitals, and infrastructure. Mines of Brazilian, Chinese, and Belgian origin are also present. Since 2020, at least 420 victims have been documented, including 119 fatalities, in 210 incidents between May 2020 and early 2025, the vast majority of whom were civilians. In 2024, the United Nations Support Mission in Libya recorded 43 victims, including 17 fatalities, among them 20 children. Libya made limited progress in clearing new areas in 2023 due to security and funding constraints (UNSMIL, 2023). The United Nations estimates that Libya may require 15 years or more, even under optimal conditions, to achieve full clearance.

Socially, landmines represent a major obstacle to the return of an estimated 50,000 internally displaced persons. They also cause permanent disabilities, damage essential infrastructure such as schools and health facilities, and hinder the reconstruction of civilian life in conflict affected areas (GICHD, 2024).

The Legal Perspective on Landmines and the Research Gap

The Islamic legal position on anti-personnel landmines and improvised explosive devices is founded on an integrated *maqasid* based framework that places the protection of life at the forefront of the essential objectives upon which Islamic law is built. The inherently indiscriminate nature of these weapons and the persistence of their effects long after the end of hostilities constitute a clear violation of the ethical and legal constraints governing the use of force in Islam. This position is reinforced by Qur'anic and Prophetic texts, most notably the verse, "Do not throw yourselves into destruction," which establishes a foundational principle prohibiting any action that leads to destruction or entrenches ongoing danger after the necessity has ceased. This description precisely applies to landmines, which remain dormant in the ground without the planter having control over their consequences or victims. The Prophetic hadith, "There should be neither harm nor reciprocating harm," provides a normative prohibition that extends beyond the initial act of harm to its continued and entrenched effects in society and the environment. This is clearly reflected in the prolonged physical, psychological, and economic damage caused by landmines (Hassan and Ali, 2023). This legal position is further strengthened by the explicit Prophetic prohibition of killing

women, children, the elderly, and noncombatants. Landmines, by their technical nature, eliminate the requirement of distinction between combatants and civilians, making their use a direct violation of this established legal principle.

Despite the clarity and strength of this legal position, a review of specialized academic literature reveals a clear research gap that has not been adequately addressed. Most international and Arab studies focus on technical or purely legal aspects and do not integrate the Islamic legal perspective into an analytical framework capable of contributing to comprehensive mine action policies. This gap is evident in the absence of a model that integrates maqasid principles, particularly the protection of life and property, with mine clearance policies and victim rehabilitation programs. Existing literature does not provide a practical translation of Islamic legal concepts into national or regional program design, nor does it explore the potential use of Islamic finance mechanisms such as zakat, waqf, and charity as sustainable resources for clearance and rehabilitation. Studies examining the impact of religious discourse and fatwas on limiting indiscriminate landmine use or shaping social behavior toward this issue are also lacking.

The research gap is further reflected in the limited number of comparative studies between Arab experiences. Most research relies on narrow country-based analyses that do not allow for an understanding of the interaction between national policies and international obligations, nor do they provide a deep reading of structural differences between States Parties and non-States Parties to the Ottawa Convention. This hinders the development of a comprehensive regional Arab model for addressing the landmine problem. The literature also shows a weak integration between value based and technical dimensions. Field studies on detection and clearance often treat local communities as neutral recipients without considering the ethical and religious frameworks that shape their awareness. This creates a gap between technical discourse and value-based reality and reduces the effectiveness of awareness and prevention programs. Based on this analysis, there is a clear need to develop a new theoretical framework that reintegrates *maqasid* based principles into mine action systems at both legal and technical levels. Such a framework should capitalize on the cultural and religious particularities of Arab societies to enhance community acceptance and ensure the sustainability of national programs. Developing this framework represents a necessary step toward addressing a long-neglected research gap and opens wide opportunities for designing policies and strategies that are more consistent with the humanitarian, legal, and developmental dimensions of this complex issue.

Discussion

1. The Scale of Landmine Contamination

Table 1

Geographic and Quantitative Distribution of Landmines in Arab Countries (2024 Estimates)

Country	**Estimated Number of Existing Landmines**	**Contaminated Area (km²)**	**Primary Source**
Egypt	17 to 23 million	6,000 to 7,500	Landmine Monitor (2024)
Iraq	8 to 20 million	1,200 to 9,500	UNMAS (2024)
Yemen	1 to 5 million	4,500 to 7,000	Landmine Monitor (2024)
Syria	6 to 7 million	3,000 to 6,000	Landmine Monitor (2024)
Libya	1.5 to 6 million	560 to 2,500	Landmine Monitor (2024)
Sudan	1.5 to 3 million	1,500 to 2,000	UNMAS (2024)
Kuwait	Limited	50 to 300	Mine Action Review (2024)
Jordan	Limited	Less than 2	Landmine Monitor (2024)
Lebanon	Less than 1 million	5 to 20	Mine Action Review (2024)
Approximate Total	More than 35 to 65 million	17,000 to 35,000 km²	Consolidated Estimates

The data presented in the tables indicate that Arab countries are among the region's most severely affected by landmines and explosive remnants of war worldwide. The table on the geographical and quantitative distribution of landmines (2024 estimates) shows that the total contaminated areas in Arab states range between approximately 17,000 and 35,000 square kilometres, with an estimated number exceeding 35–65 million landmines and explosive devices. Egypt, Iraq, Yemen, Syria, Libya, and Sudan rank among the most affected countries in terms of both the extent of contaminated land and the number of mines, whereas Kuwait, Jordan, and Lebanon are comparatively less affected in quantitative terms, although varying levels of risk persist in these countries.

These statistics confirm that the Arab region contains approximately 15–18% of the total number of landmines worldwide, a high proportion that reflects the cumulative impact of global, regional, and domestic conflicts, including the Battle of El Alamein in North Africa, the Arab–Israeli wars, as well as civil wars and internal conflicts. The case of Egypt clearly illustrates the phenomenon of historical accumulation, as a substantial proportion of the landmines present date back to the Second World War. The retention of detailed minefield maps by the former belligerent states further adds logistical and technical complexity to clearance operations. Moreover, the rising figures in Syria and Yemen demonstrate that ongoing conflicts continue to generate new landmines and improvised explosive devices on a daily basis, thereby intensifying the challenges of demining efforts and prolonging the duration of associated risks.

Table 2
Annual Casualty Statistics in Arab Countries (2025)

Country	Annual Number of Victims	Percentage of Civilians (Estimated)	Percentage of Children	Source
Syria	900+	88%	30–33%	UNMAS (2025)
Yemen	499	83%	42–50%	—
Iraq	102	80%	25–30%	—
Sudan	792+	80%	35–40%	—
Libya	43	70%	47%	—
Lebanon	30	80%	18%	—
Egypt	40	90%	20%	—
Kuwait	Not available	Not available	Not available	—
Jordan	Not available	Not available	Not available	—

Human and Humanitarian Costs: Injuries and Casualties
The data on annual injury statistics demonstrate that landmines and improvised explosive devices (IEDs) continue to claim civilian lives across several Arab countries, particularly in areas experiencing active conflict. As shown in the table, Syria records the highest number of annual casualties, followed by Sudan and Yemen, while Iraq, Libya, and Lebanon report comparatively lower figures. In contrast, Kuwait and Jordan register almost no new casualties, largely due to substantial progress achieved in mine clearance operations.

The figures further indicate that civilians account for approximately 80% of total recorded casualties in the region a proportion that exceeds the global average. Notably, children represent no less than 35–50% of civilian casualties in certain countries, including Syria, Yemen, and Sudan. This pattern underscores the indiscriminate nature of landmines and explosive remnants of war, which are inherently incapable of distinguishing between combatants and noncombatants. Overall, the Arab region records an average of more than three casualties per day, with an annual death toll exceeding 300 fatalities. This implies that nearly one-third of injuries result in death, a rate considered high by international standards and indicative of fragile healthcare systems, limited emergency response capacity, and inadequate rehabilitation services, particularly in conflict affected areas. The disproportionately high concentration of victims among children and women highlights the profound incompatibility between the reality of landmine contamination and the Islamic principles of the preservation of life (*ḥifẓ alnafs*), as well as international obligations related to child protection and human rights.

Economic Costs and the Cost of Mine Action
Table 3: Economic Costs and Funding Estimates
The economic indicators presented in the table reveal that the cost of clearing a single landmine can reach up to USD 1,000. Consequently, the estimated total cost of removing more than 30 million landmines in the Arab region exceeds USD 30 billion, excluding opportunity costs. Estimates further suggest that agricultural losses alone amount to hundreds of millions of dollars annually, as vast contaminated areas remain unusable for cultivation and development.

According to *Landmine Monitor 2023*, current annual expenditures on mine action programs in the region are approximately USD 400 million. Meanwhile, the *UNMAS Strategic Framework* identifies an annual funding gap of nearly 70% of actual needs, indicating that available financial resources fall far short of what is required to achieve effective and systematic clearance. These findings confirm that landmines constitute not only a humanitarian burden but also a structural economic obstacle to development, safe return of displaced populations, food security, agricultural investment, and infrastructure projects. In the long term, the cost of leaving landmines in place far exceeds the cost of their removal.

Commitment to the Ottawa Convention (1997)

Table 4: Arab Commitment to the Ottawa Convention (1997)

The table on adherence to the Ottawa Convention shows that 14 Arab states are parties to the treaty, while eight countries Lebanon, Libya, Morocco, Saudi Arabia, Syria, the United Arab Emirates, Egypt, and Bahrain have not signed it. Notably, four of the no signatory states Lebanon, Libya, Syria, and Egypt are among the most severely affected by landmines and explosive remnants of war. This raises critical questions regarding the gap between the scale of contamination and the level of international legal commitment.

Moreover, the proportion of Arab states party to the Convention (approximately 63–64% of all Arab countries) remains below the global average. Several no signatory states justify their position on security grounds, citing the perceived need for landmines as a defensive tool for border protection and national security. These findings reveal an enduring tension between traditional security considerations and the requirements of human security and international humanitarian law—an issue that this study examines through the lens of Islamic legal objectives (*maqāṣid alsharīʿa*), particularly the preservation of life and property.

Progress in Mine Clearance (2015–2025)

Table 5: Progress in Mine Clearance, 2015–2025

The data presented in the table demonstrate significant variation among Arab countries in terms of cleared and remaining contaminated areas, as well as the estimated timeframes required to achieve full clearance. Kuwait and Jordan have made remarkable progress, having removed most mines from declared areas, with relatively short remaining periods for final clearance. This success is largely attributable to political stability, effective institutional frameworks, strong international partnerships, and adequate funding.

Lebanon has achieved moderate progress but still requires several additional years to complete clearance in remaining areas. In contrast, Libya and Sudan face longer timelines due to ongoing security challenges and uneven funding. The data further indicate that Egypt, Iraq, and Yemen are likely to require the longest periods ranging from 10 to 40 years to approach near complete clearance, depending on scenarios of stability and financial support.

At current regional clearance rates, estimated at approximately one million landmines per year, the Arab world may require nearly three additional decades to eliminate remaining contamination. This suggests that landmines will continue to pose a long-term threat to future generations unless funding mechanisms and regional and international cooperation are significantly strengthened. The findings also reveal that successful countries such as Jordan and Kuwait have achieved higher clearance rates at relatively lower costs due to

institutional clarity and political stability, whereas countries facing protracted conflicts such as Iraq, Yemen, and Syria experience slower progress due to ongoing violence, partial institutional collapse, funding shortages, and the continued deployment of landmines and IEDs by nonstate armed groups.

Outcomes of Arab Cooperation Initiatives

Table 6: Arab Contributions to Mine Action

The table on Arab cooperation highlights Saudi Arabia and the United Arab Emirates as leading contributors to mine action initiatives in the region. The Saudi led *Masam Project*, implemented by the King Salman Humanitarian Aid and Relief Centre in Yemen, has removed more than 518,633 landmines and explosive devices and cleared approximately 63 square kilometres at a cost exceeding USD 167 million, while also providing logistical support and training for national teams. Similarly, the UAE's *Solidarity Project* in Lebanon represents another model of Arab cooperation, having contributed to the clearance of more than three square kilometres of contaminated land through funding and operational management.

These cases demonstrate that Arab cooperation grounded in shared ethical, religious, and financial capacities can produce tangible results in accelerating mine clearance, particularly in countries suffering from institutional fragility and severe funding constraints. Accordingly, the findings underscore the importance of strengthening Arab partnerships alongside collaboration with international organizations within a value based Islamic framework that reinforces collective responsibility for harm reduction and the preservation of life and property in affected communities.

Conclusion

This study demonstrates that mine action in the Arab world requires sustained and serious efforts based on increased funding, the adoption of modern technologies, and the activation of an Islamic perspective capable of enhancing moral and religious legitimacy while mobilizing societal and institutional support. The aggregated findings confirm that landmine contamination in Arab countries constitutes a multidimensional catastrophe with humanitarian, economic, technical, and ethical dimensions. Estimates suggest the presence of nearly 60 million landmines spread across vast territories, placing the Arab region among the most heavily contaminated areas worldwide.

These vast numbers translate into an escalating humanitarian burden, with thousands of casualties recorded annually. The data clearly show that civilians and children account for the majority of victims, painting a bleak picture of the social and psychological consequences for families and local communities. Economically, landmines generate substantial losses through the paralysis of agricultural land and critical infrastructure, in addition to the immense financial burden of healthcare and long-term victim assistance. The high cost of clearing individual landmines, combined with annual losses amounting to billions of dollars, further compounds the challenge.

The results also reveal a marked slowdown in clearance progress, with projections indicating that complete demining may require no less than four decades, particularly given persistent funding gaps and the continuation of armed conflicts that fuel the deployment of new landmines and improvised devices. This situation is exacerbated by weak Arab adherence to

the Ottawa Convention, despite the existence of a strong Islamic ethical foundation that supports the preservation of life and the prohibition of corruption and harm on earth. Evidence suggests that mine action programs grounded in a clear Islamic ethical discourse tend to achieve higher levels of community acceptance and effectiveness (Mine Action Review, 2023).

Based on these findings, addressing the landmine crisis in the region requires a multilevel strategy integrating national efforts, regional and international support, and systematic activation of the Islamic dimension. At the national level, comprehensive and goal-oriented plans must encompass clearance, medical and psychological care for victims, community awareness, increased domestic funding, and the development of national capacities in advanced technologies such as robotics, artificial intelligence, and unmanned aerial systems. Rehabilitation programs and labour market integration for survivors and support for victims' families must also be strengthened (Handicap International, 2023).

At the international level, urgent action is needed to bridge the funding gap through broad partnerships with international institutions and foreign actors, particularly states historically responsible for mine deployment in the region. Enhanced coordination through Arab and Islamic technical committees is recommended to facilitate knowledge exchange, data sharing, and operational harmonization. Legally, Arab states that have not yet acceded to the Ottawa Convention should be encouraged to do so in order to strengthen international compliance and reduce future risks.

From a religious and ethical perspective, efforts can be reinforced through the issuance of a unified Islamic legal opinion (*fatwa*) prohibiting the indiscriminate use of landmines and IEDs, affirming the obligation to remove them and to provide care for their victims in accordance with the objectives of Islamic law. Islamic financing instruments such as zakat, charitable donations, and endowments should be mobilized to establish dedicated funds for clearance and rehabilitation. Targeted religious discourse can also play a vital role in raising awareness and promoting behavioural change in rural and high-risk communities (Qasim et al., 2021).
Finally, in the field of scientific research, there is a pressing need to support Arab research centres and universities in developing innovative detection and clearance technologies, as well as to establish an updated, unified regional database documenting contaminated sites, casualties, and economic losses. Such initiatives would enable evidence-based policymaking and facilitate long term comparative studies assessing the effectiveness of conventional mine action programs versus those integrated with an Islamic ethical framework.

References

Abdullah, S. M. (2024). Health consequences of landmine injuries in post-conflict Sudan: A systematic review. BMJ Global Health, 9(3), e008123. https://doi.org/10.1136/bmjgh-2023-008123

Abu-Raya, A., & Qasem, M. (2021). Long-term health consequences of landmine victims in Jordan: A longitudinal study. Disability and Rehabilitation, 43(12), 1709–1718. https://doi.org/10.1080/09638288.2019.1699175

Action on Armed Violence. (2023). Explosive violence in Western Sahara. https://aoav.org.uk

Al-Zubairi, M. (2021). The legal framework for mine action in the Arab world: Harmonizing national laws with the Ottawa Convention. Arab Journal of International Law, 5(2), 112–130.

APOPO. (2024). 8 not-so-fun facts about landmines (and 3 more hopeful ones). https://apopo.org/what-are-landmines-2024/

Arab News. (2006, December 23). UAE engineering units clear South Lebanon villages of mines. https://www.arabnews.com/node/292621

Arms Control Association. (2025). The Ottawa Convention at a glance. https://www.armscontrol.org/factsheets/ottawa-convention-glance

Britannica. (2025). Improvised explosive device (IED). https://www.britannica.com/technology/improvised-explosive-device

Clearing the Mines. (2025). Egypt chapter. Mine Action Review. https://www.mineactionreview.org/assets/downloads/Egypt_Clearing_the_Mines_2025.pdf

El-Huni, A., & Ben-Said, F. (2022). Analyzing the challenges of mine clearance in desert environments: The case of Libya. Sustainability, 14(18), 11450. https://doi.org/10.3390/su141811450

Garbino, H., & Bolton, M. (2023). Protecting the innocent, the land, and the body: Traditional sources of restraint on landmine use. ICRC Humanitarian Law & Policy Blog. https://blogs.icrc.org/law-and-policy/2023/03/23/protecting-innocent-restraint-landmine/

Geneva International Centre for Humanitarian Demining (GICHD). (2024). Annual report 2024: The role of international support in developing the Libyan national mine action strategy (LibMAC). https://www.gichd.org/fileadmin/uploads/gichd/Media/Annual_Report_2024/GICHD_2024_AR_Final_Digital_LR.pdf

HALO Trust. (2023). Iraq: Mine action programme overview. https://www.halotrust.org/where-we-work/middle-east/iraq/

Hamad, F. A. (2022). Environmental contamination by explosive remnants of war in agricultural lands of Syria: Challenges for recovery. Environmental Science and Pollution Research, 29, 4567–4580. https://doi.org/10.1007/s11356-021-16503-7

Handicap International. (2018). 2018 annual report: Standing up for the most vulnerable. Humanity & Inclusion. https://www.hi.org/sites/hi/files/2018-annual-report_hi-network-en.pdf

Handicap International. (2023). Rehabilitation services in Middle East conflict zones. https://www.hi-us.org/

Hassan, A., & Ali, S. (2023). Psychological trauma among victims of explosive remnants of war in Yemen: A qualitative study. International Journal of Environmental Research and Public Health, 20(4), 3392. https://doi.org/10.3390/ijerph20043392

Human Rights Watch. (2023). Syria: Landmines, cluster munitions endanger civilians. https://www.hrw.org/news/2023/04/04/syria-landmines-cluster-munitions-endanger-civilians

Human Rights Watch. (2025). Syria: Landmines, explosive remnants harming civilians. https://www.hrw.org/news/2025/04/08/syria-landmines-explosive-remnants-harming-civilians

Humanity & Inclusion. (2021). Iraq bomb contamination: Catastrophic, six times as costly to remove, and a serious barrier to recovery. https://www.hi-us.org/en/iraq-bomb-contamination--catastrophic--six-times-as-costly-to-remove--and-a-serious-barrier-to-recovery

Humanity & Inclusion. (2022). Needs assessment of landmine survivors in Iraq. https://www.hi.org/en/country/iraq

International Campaign to Ban Landmines (ICBL). (2025). Landmine Monitor 2025. https://backend.icblcmc.org/assets/reports/Landmine-Monitors/LMM2025/Downloads/Landmine-Monitor-2025-Final-Online.pdf

ICBL–CMC. (2024). Landmine Monitor 2024. https://backend.icblcmc.org/assets/reports/Landmine-Monitors/LMM2024/Downloads/Landmine-Monitor-2024-Final-Web.pdf

International Mine Action Standards. (2025). Syria: The world's largest minefield. United Nations.

Jassim, K., & Al-Shammary, N. (2022). Assessing the effectiveness of mine risk education programs in post-conflict Iraq. International Journal of Disaster Risk Reduction, 75, 102987. https://doi.org/10.1016/j.ijdrr.2022.102987

Jordan National Commission for Demining and Rehabilitation. (2025). National mine action strategy 2021–2025: Final progress report. Amman: NCDR.

Khamis, A. (2021). Landmines and UXOs in Egypt. MineProbe. https://alaakhamis.org/MineProbe/landmines-uxos-egypt.html

KSrelief. (2025). Masam Project – Landmine clearance in Yemen (official statistics). https://www.ksrelief.org/Programs/MASAM

Landmine Action Review. (2021). Clearing the mines 2021: Egypt. https://www.mineactionreview.org/assets/downloads/Egypt_Clearing_the_Mines_2021.pdf

Life of Mine. (2019). Lebanon. https://www.lifeofmine.org/lebanon

Lords Library. (2024). Ottawa Treaty and the Convention on Cluster Munitions: Recent developments. https://lordslibrary.parliament.uk/ottawa-treaty-and-the-convention-on-cluster-munitions-recent-developments/

MAG. (2024). Landmine Monitor 2024 reveals alarming rise in global casualties. https://www.maginternational.org/news/landmine-monitor-2024-reveals-alarming-rise-in-global-casualties/

Masam Project. (2023). Masam Project achievements report 2023. https://www.projectmasam.com/en/

Mine Action Review. (2023). Clearing the mines 2023. https://www.mineactionreview.org/

Noon Post. (2024). The landmine problem in Iraq: Funding shortages may prolong the crisis for 30 years. https://www.noonpost.com/199902/

Othman, Z. M., & Karim, S. A. (2021). Impact of landmine contamination on internal displacement and returnee processes in Northern Iraq. Journal of Refugee Studies, 34(3), 365–380. https://doi.org/10.1093/jrs/feaa051

Project Masam. (2025). Demining operations update – February 2025. https://www.projectmasam.com/eng/2025/02/

Qasim, A. R., Hashim, A. H., & Majeed, M. K. (2021). Socio-economic impact of landmines and explosive remnants of war on rural communities in the Kurdistan Region of Iraq. Conflict and Health, 15(1), 1–12. https://doi.org/10.1186/s13031-021-00353-7

SafeLane Global. (2019). Kuwait – SafeLane operations. https://www.safelaneglobal.com/experience/kuwait

Syrian Network for Human Rights. (2023). Landmines in Syria: A continuous threat. https://snhr.org

The HALO Trust. (2024). Saving lives in Syria. https://www.halotrust.org/where-we-work/middle-east/syria/

UNDP Yemen. (2023). Assessing the impact of landmines on development in Yemen. https://www.undp.org/yemen

United Nations Mine Action Service. (2023). Kuwait Article 5 report under the Anti-Personnel Mine Ban Convention (IM23-4). https://www.apminebanconvention.org/fileadmin/_APMBC-DOCUMENTS/Meetings/2023/IM23-4-Art5-Kuwait.pdf

United Nations Mine Action Service. (2023). Handbook on landmines, explosive remnants of war and IED safety. https://www.unmas.org/sites/default/files/handbook_english.pdf

United Nations Mine Action Service. (2024). Annual report 2023. https://www.unmas.org/en/unmas-annual-report-2023

United Nations Mine Action Service. (2025). Libya programme. https://www.unmas.org/en/programmes/libya

United Nations Support Mission in Libya. (2023). Report of the Secretary-General on UNSMIL. https://unsmil.unmissions.org/

Yemen Red Crescent Society. (2023). Mine action programs.

The Holy Qur'an. (n.d.). Surah Al-Baqarah (2:195).