

Press kit



For a mine-free world

25 years after the signing of the Landmine Ban Treaty

Humanity & Inclusion





25 YEARS OF THE MINE BAN TREATY

How mine clearance became a humanitarian issue

The adoption of the Mine Ban Treaty or Ottawa Convention twenty-five years ago led to fewer mines in the ground. But now the weapons used by belligerents are changing, along with the nature of the threat, requiring mine clearance experts to take a new approach.

A quarter of a century on, the treaty has made a real difference. Manufactured landmines, used, for example, by an army to “secure” a military base, are on their way to being eradicated. In the 2000s, there was a tenfold decrease in landmine casualties. A total of 164 States have now signed the Mine Ban Treaty and 94 States have destroyed more than 55 million mines.

But mine clearance experts are now facing **new kinds of contamination, mostly by improvised devices used as landmines, and explosive remnants of war.**

Casualties on the rise again since 2015

Improvised devices are devious weapons and take a variety of forms. They can be concealed in soft toys or tin cans, and are equipped with unbelievably sophisticated trigger mechanisms, such as trip wires, motion sensors and pressure pads. Each homemade model is unique and **designed to kill, maim and terrorise civilians.**



Deployed extensively since the conflict in Syria and Iraq, where they are used to booby trap everything from living rooms to fridge doors and wells, **improvised mines have forced mine clearance experts to reinvent the way they work.**

Explosive remnants of war such as unexploded mortars, bombs and rockets - **deadly legacy of the intensive use of explosive weapons in armed conflicts** - pose another serious challenge to mine clearance experts. Mixed with rubble, they contaminate vast tracts of land in urban areas. Sometimes present in large numbers, they make the work of mine clearance experts much harder.

Since 2015, the number of people killed and injured by these weapons have risen again as belligerents change their practices. **Improvised mines and explosive remnants now cause more than 50 percent of mine deaths and injuries.** In 2020, more than 7,000 people were killed or maimed by mines.

Humanitarian mine clearance: demining for communities

Changing circumstances, characterised by long, asymmetrical conflicts and intensive use of explosive weapons, led to the emergence of a new form of non-military mine clearance: **humanitarian mine clearance**, which started to develop in the 1990.

The aim of military mine clearance is to clear roads and infrastructure of weapons. It does not take into account the needs of local people. In contrast, **humanitarian mine clearance experts work with local communities.** They decide together which infrastructure or places to clear first, such as land where villagers grow their food, a busy road, or a village square where people meet and talk every day. **The goal is to clear essential areas fast, so community life can return to normal.**

Contamination hinders the return of peace and development; when mines prevent fields from being farmed, markets from being held or people from travelling to the next village, they lock families into poverty, break social ties and raise tensions between communities. **Including communities is crucial to prioritising the clearance of areas for immediate use and to rebuilding people's lives.**

Drones and Go-Pro cameras to address new threats

Faced with new types of contamination, humanitarian mine clearance organisations have developed innovative new technical solutions. **HI was one of the first organisations to experiment with drones and to use them for its mine clearance operations.** It also plans to equip its mine clearance experts with Go-Pro cameras to improve team safety and supervision. Since mine clearance experts are always remotely supervised, their colleagues will be able to use the new system to monitor and better direct and advise them live on screen for even safer, faster and more effective mine clearance.

Civilians are still the main victims of mines and explosive remnants. **Children still represent more than 40% of civilian victims.** And 60 countries and regions are still contaminated globally. This contamination poses a direct threat to millions of lives. It is a major obstacle to peace and growth. In Syria, Iraq and Yemen, it has reached levels never seen before by mine clearance experts. **It will take them decades to remove the threat hanging over these communities.**

Understanding the Ottawa Convention Mine Ban Treaty

The treaty was opened for signature in Ottawa, Canada, on 3 December 1997.

It entered into force on 1 March 1999.

164 States are now party to the convention [one State (the Marshall Islands) has signed but not ratified it].

Convention definition:

“Anti-personnel mine” means a mine designed to be triggered by the presence, proximity or contact of a person and one that will incapacitate, injure or kill one or more persons.

Each party undertakes:

- Never under any circumstances to use, develop, produce, otherwise acquire, stockpile, retain or transfer to anyone, anti-personnel mines. To assist, encourage or induce, in any way, anyone to engage in any activity prohibited to a State Party under the Convention.

- To destroy all stockpiled anti-personnel mines no later than four years after the entry into force of this Convention and to destroy all anti-personnel mines under its jurisdiction or control not later than ten years after its entry into force.

- To provide assistance for mine awareness programmes and oversee the protection of civilians in mined areas.

- To provide assistance for the care and rehabilitation, and social reintegration, of mine victims, and provide assistance for mine clearance.

- To adopt national implementation measures to ensure the convention is enforced within their jurisdiction.

- To provide an annual report concerning the action it has taken to comply with its provisions.



Campaign timeline

1982



HI is founded to orthopaedically fit thousands of mine amputees on the Thai-Cambodian border.

1992



Launch of the International Campaign to Ban Landmines (ICBL) by HI and five other NGOs.

Request for an international mine action conference.

1993



French president François Mitterrand requests an international conference to revise the 1980 UN convention governing the use of mines.

1994



110 NGOs join the ICBL.

Campaign timeline

1995



Community engagement with the first Shoe Pyramids in France.

39 States publicly back a mine ban.

A conference organised in Geneva becomes mired in technical minutia and ends in failure.

1996



ICBL now has 650 members. Canada organises an international mine ban conference.

Mine survivors lend weight to international meetings.

Diana, Princess of Wales, strongly backs the campaign and becomes a leading advocate for the cause.

One million people sign an international mine ban petition.

1997



Signing of the Ottawa Convention banning anti-personnel mines.

HI is the co-winner of the Nobel Peace Prize.

HI erects the Broken Chair opposite the Palais des Nations Unies in Geneva to call on States to sign the Ottawa Convention.

Interview

“The line between periods of peace and violence is increasingly blurred”



Perrine Benoist
Director of the Armed Violence Reduction Division at HI

How has humanitarian mine clearance changed in recent years?

The circumstances in which we work have changed. Two decades ago, mine clearance experts would start work at the end of the war after a peace deal had been signed. It's more complicated now: the line between periods of peace and violence is increasingly blurred; weapons are more sophisticated, and their impact is devastating. We work in complex and unstable situations. The technology and methodology used by mine clearance experts have also changed to meet needs and limit the number of victims of explosive devices as best as possible.

How would you describe these new situations?

Humanitarian mine clearance experts work in a variety of situations. In Yemen, Libya, Syria and Iraq, where conflicts are still being fought, mine clearance or “decontamination” operations, which consist in collecting

unexploded bombs or explosive remnants, aim to save lives and make communities safer. They also help communities adapt to hazardous environments, which are sometimes deliberately set up with booby-trap devices. They are mindful of the psychological, social and economic impact of violence, such as bombing, urban guerrilla warfare and booby traps.

Other countries - Lebanon, the Mekong region, Colombia, and so on - have achieved lasting peace but contamination by mines and explosive remnants of war is hindering development, sometimes more than five decades after the end of hostilities. Humanitarian mine clearance experts - like HI in Lebanon, Laos and Colombia - work to restore land and infrastructure in order to facilitate economic growth.

More broadly, humanitarian mine clearance helps achieve the goals of the Ottawa Convention for a mine-free world by 2025, and deliver Signatory States from contamination, as HI successfully did in Mozambique and North Lebanon. HI is currently focusing on these activities in Senegal and Chad. Mine clearance in these countries also prevents the misappropriation of used explosive devices or weapons by armed groups, who sometimes recover, resell and reuse them.

What are the specific characteristics of humanitarian mine clearance?

‘Military’ mine clearance often only aims to open up roads and tracks without considering the needs of the local population. As humanitarian mine clearance experts, we work hand in hand with local populations. We ask communities what is socially and economically most useful to them, such as farmland, a bridge or main road, or a village square used by the local community every day.

In our report on contamination in Iraq³, published in October 2021, numerous personal accounts reveal how accidents often happen because inhabitants have

no alternative. One small-scale farmer, for example, knew pasture land was contaminated but risked using it because he had no other means of feeding his family. It is important to understand the full impact of contamination. Contamination by explosive remnants of war has a human as well as psychological, social and economic impacts. Contaminated fields can no longer be farmed, markets can no longer be held, and people are less able to move from village to village because the journey is dangerous, neighbourhoods have been razed to the ground and social ties destroyed. Action on mines and explosive remnants is an essential first step towards rebuilding communities.

Mine clearance is moving increasingly towards “conflict transformation”. What does this involve?

Neutralising weapons, raising awareness of at-risk communities, assisting victims, analysing the impact of conflicts and the presence of explosive devices, and providing communities with alternatives to meet their essential needs (using an alternative path to a contaminated one, drawing water without using a booby-trapped well, etc.) are essential activities and help “transform” a conflict situation into lasting peace. But to end a cycle of violence, we also need to understand its causes. This is why we aim to help communities rebuild their relationships and support peaceful behaviour to foster reconciliation in conflict situations.

How extensive is the problem of improvised mines?

The Landmine Monitor 2021 report recorded a total of 7,073 mine/explosive remnants of war casualties in 2020, 20% more than in 2019. Improvised mines accounted for the highest number of casualties, a third of victims, for the fifth year in a row. It is a large-scale problem and a major challenge for mine clearance experts.

What does an improvised mine look like?

It can take many forms, and this is the crux of the problem. Some look like toys, for example, and might be linked to a gas canister triggered by a cable stretched across the entrance to a house. These devices can be extremely cunning and are designed to terrorise and trap the local population. Explosive engines, triggered by their victim, are among the devices banned under the Ottawa Convention.

Have mine clearance techniques changed over the last two decades?

The basic techniques are the same, but humanitarian mine clearance techniques have become more innovative in recent years. Since 2019, HI has developed the use of drones to support mine clearance experts by identifying suspicious devices from higher altitudes and helping map extensive areas. In the future, we plan to test on-board cameras. Using GoPro cameras attached to mine clearance equipment, a mine clearance expert can remotely guide and advise their partner on a mine clearance site. This is particularly useful in areas contaminated by improvised devices because they are harder to render safe and therefore pose a greater risk to our teams.

³ https://reliefweb.int/sites/reliefweb.int/files/resources/Report2021_EO-Contamination-Iraq-EN-final.pdf

Focus Iraq

Contaminated by forty years of successive conflicts

After decades of conflict, instability and the occupation of part of its territory by the Islamic State (IS) group, Iraq is one of the world's most contaminated countries.

HI is implementing a programme to reclaim land contaminated by explosive devices in the governorates of Diyala and Kirkuk in northeast Iraq. Since this issue directly affects some 80,000 people, our aim is to reduce the immediate threat from explosive remnants and improvised explosive devices.

In the governorate of Kirkuk, contamination prevents access to water (25% of cases), farmland (28%) and roads (27%)⁴. Besides security problems, the threat from explosive devices makes travel dangerous, including for people fleeing the conflict still raging in some parts of the governorate.

At the end of 2021, HI is clearing devices from farmland close to Al-Bashir, a small town of 5,000 inhabitants. The land is contaminated by improvised explosive devices, a highly distinctive form of contamination for which mine clearance experts require special training. The teams are finding large numbers of devices fitted with victim-activated pressure plates, a system similar to anti-personnel mines.

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- **Number of mine clearance experts: 34**
 - **Area cleared by HI in 2020: 350,000 square metres**
 - **Land surveyed: 50 million square metres**
 - **Background: rural and semi-desert areas, extreme temperature fluctuations**
 - **Contamination type: improvised devices**
 - **Length of project: 36 months**

Legacy of the Islamic State group

To date, 8.5 million Iraqis live in areas affected by mines and more than 3,200 million square metres of land have been contaminated, twice the surface area of London. The five provinces formerly controlled by the Islamic State group (Kirkuk, Diyala, Nineveh, Anbar and Salah al-Din) are particularly heavily contaminated, notably by improvised devices. Mines and explosive remnants killed or maimed some 700 people between 2018 and 2020.

Iraq is also contaminated by earlier conflicts, including the Iran-Iraq war in the 1980s, and the conflict in the early 2000s, which left behind mines, explosive remnants, cluster munitions, and other devices.

⁴ Information Management System for Mine Action – IMSMA



Focus Senegal

HI's mine clearance experts return to Casamance

HI will relaunch its mine clearance operations in Casamance in 2022. HI's teams plan to clear 100,000 sq.m. of land, equivalent to 15 football fields, in the regions of Sédhiou and Ziguinchor, an area with fifty or so villages. Some 500,000 sq.m. of land has already been cleared in the region since 2008.

Reclaiming land for communities

Twenty years after the ratification of the Ottawa Convention by Senegal, some 1.2 million square metres of land in Casamance are still contaminated by anti-personnel mines and explosive remnants of war. This contamination was caused by violent clashes between the Senegalese army and Casamance independence fighters in the 1980s and 1990s.

Land restitution

Contamination continues to threaten local lives and prevents displaced people from

returning home. Mines are scattered across roads and tracks but mainly contaminate farmland - a vital source of local revenue. After HI clears the land, families can move around safely and start farming it again.

In the long-term, mine clearance will promote the economic and human development of these areas and, indirectly, the region as a whole. These positive changes could also encourage thousands of displaced people who fled Casamance years ago to return home.

- **HI team: 25 people, including six mine clearance experts.**

- **Background: 50 villages affected by mines and explosive remnants of war in the regions of Sédhiou and Ziguinchor; dense vegetation slows the work of mine clearance experts. The security situation remains fairly volatile.**

- **Length of the operations: 1 year.**



Historical involvement

HI's teams have been working in Senegal since 1996. They launched their operations in Casamance in 1999, providing physical rehabilitation care and psychological support to mine survivors, and mine/explosive remnants of war risk education to local communities.

Between October 2005 and May 2006, HI carried out a contamination survey in Casamance covering 251 localities to determine and identify suspected hazardous areas and the impact on communities. In February 2008, HI launched the first mine clearance activities, including the use of mine detection dogs and a mine clearance machine called a digger. The team includes several women. HI is the only humanitarian mine clearance organisation working in Senegal.

Focus Colombia

HI clears mines for rural populations in hard-to-reach regions

Since 2016, HI has been one of four official mine clearance actors in Colombia. The organisation is recognised by the authorities and communities for successfully completing its actions.

Mine clearance in rural areas

In September 2021, HI cleared mines in 15 municipalities in five departments: Meta, Cauca, Nariño, Caqueta and Antioquia. HI works mainly in rural areas not covered by public programmes.

In 2020, HI cleared 29,188 sq.m. of land, equivalent to four football fields, over a period of twelve months. The same year, 28 explosive devices were destroyed or neutralised. In October 2021, HI declared the Puracé area mine-free, making it the first municipality to be completely decontaminated by HI's teams in Colombia.

Most explosives found in Colombia are improvised devices for which mine clearance experts require advanced technical expertise.

Cooperating with communities

All decisions are taken in conjunction with local authorities, including where and when to clear land and how mine risk education is implemented. This makes it easier to access land and form relationships of trust with local communities. The organisation focuses its action on certain more vulnerable groups, including women, refugees and indigenous communities.

HI has adopted an integrated approach in Colombia. As well as decontaminating land, the organisation promotes social and economic development inclusive of affected communities through mine risk training

and education, assistance to people with disabilities, capacity building for community actors, advocacy for a more inclusive society, and other activities. The organisation is also recognised as a humanitarian actor, not to be confused with military bodies, which also clear mines in the country.

The organisation works with Colombians who are trained in the field to be mine clearance experts.

- **HI team: 156 people including 36 mine clearance experts.**

- **Background: humanitarian mine clearance in six municipalities. Logistical challenges: heavy rain, lush vegetation, mountainous areas, few roads.**

- **Length of operation: 5 years**

Conflict in Colombia

The conflict between government forces and armed groups lasted nearly fifty years. A historic peace deal was signed in 2016. Several armed groups are still active in the country today, fuelling insecurity.

This active conflict makes it more difficult to access clearance sites. Conditions worsened in 2020 with the Covid-19 pandemic, which caused a serious economic crisis and hampered mine clearance actions.

Colombia is still one of the world's most mine-contaminated countries. A total of 28 out of 32 departments are contaminated. Between 1990 and August 2021, 12,092 people were injured by an anti-personnel mine or explosive remnant of war.

Testimony

“Our land is contaminated by explosive weapons”

Ahmed Jaafar Ibrahim, a father of 9 children, talks about the impact of mine clearance

“My name is Ahmed Jaafar Ibrahim. I’m 60 years old. I have nine children. I am the “Mukhtar” * (head of the local community) in the village of Al-Bashir, near Kirkuk, where HI’s mine clearance team is working. Some 750 families (5,000 people) live in the village. Most of the villagers are farmers or shepherds; some are public sector workers. Many areas around Kirkuk are still contaminated. A lot of people and cattle have fallen victim to explosive remnants of

war and explosive devices. Some people have been killed and others are permanently disabled.

A farmer in Bashir was killed in 2019 by an improvised booby-trap device which exploded when he turned on a tap to water his crops.

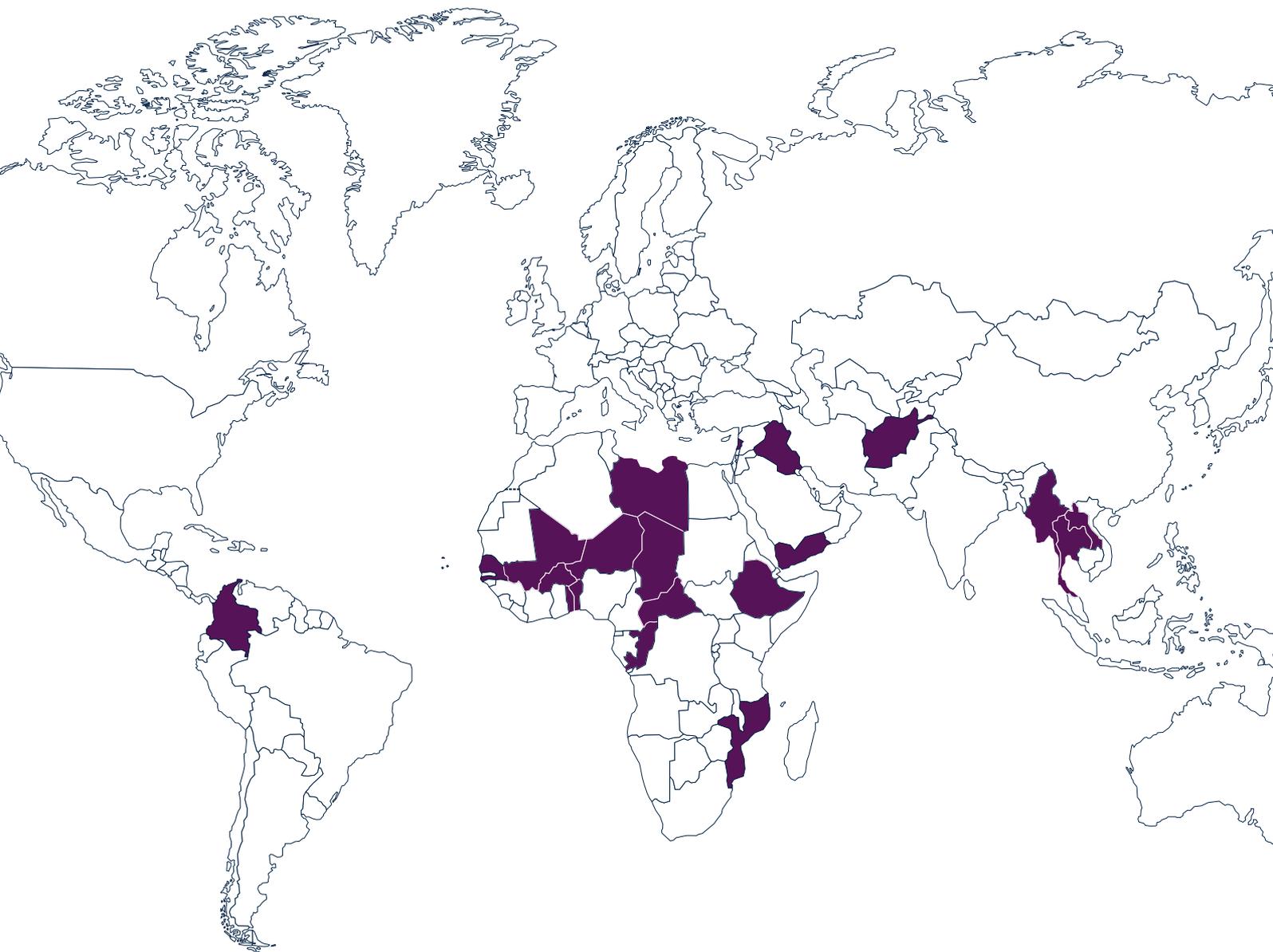
Thanks to HI’s mine clearance team, we’re starting to feel safer again, and it will prevent accidents in the future. The village is better informed on explosive munitions through risk education sessions and panels and posters. We feel safer now and we can farm our fields. They are going to clear the land and make it available again to grow crops.”

* Testimony from the end of 2021



Armed Violence Reduction at HI

Armed violence reduction at HI includes mine clearance, decontamination, risk education, victim assistance and government advice missions.



Armed violence reduction in 21 countries (excluding victim assistance)
Afghanistan, Benin, Cambodia, Central African Republic, Chad, Colombia, Democratic Republic of Congo, Ethiopia, Gaza, Iraq, Laos, Lebanon, Libya, Mali, Mozambique, Myanmar, Niger, Senegal, Thailand, Togo and Yemen

Mine clearance and risk education



Weapons clearance 2022: Chad, Colombia, Laos, Lebanon, Iraq, Syria and Senegal.

- Cambodia: supporting local mine clearance actors
- Non-technical surveys*: planned in Yemen, Myanmar and Libya in 2022

At a glance:

More than 40 million square metres cleared in 2020

8,500 devices rendered safe in 2020

Risk education : Burkina Faso, Colombia, Iraq, Laos, Lebanon, Libya, Thailand, Yemen, Myanmar.

Risk education:
300,000 beneficiaries in 2020

* A non-technical survey is the inquiry led by Mine clearance experts to determine if an area is contaminated and if clearance operations are needed.

Interview

“Mine clearance experts from local communities improve acceptance”



Seydou Gaye is HI's armed violence reduction expert, specialising in mine clearance, risk education and weapons and munitions management.

How has mine clearance changed in recent years?

I started working as a mine clearance expert twenty years ago. We mainly used to work manually with a metal detector. We now also use mechanical devices (mine clearance machines), mine detection dogs, and innovative technology such as drones with on-board cameras. Our operations are faster and more effective now. In recent years, international funding bodies have given priority to conflict-affected countries in the Middle East where people are impacted by high levels of contamination, such as Syria, Iraq, etc. and where many people have been killed or maimed by improvised explosive devices.

What added value does HI offer for mine clearance?

HI has trained a large number of humanitarian mine clearance experts in Africa, including more than one hundred mine clearance experts in the last 15 years. More and more women are working as mine clearance experts, at all qualification levels. In Senegal, for example, Elisabeth Sambou, ECO Level 3⁵, controls the mine clearance machine. HI has made it possible for women to work in positions of responsibility, including team supervision. The approach taken by the organisation puts affected populations at the centre of its operations. We always involve communities when deciding which areas to clear as a priority. HI has also successfully used its mine clearance operations to address development challenges: in Chad, in addition to mine clearance, HI helps beneficiaries reclaim contaminated land and restart social and economic activities.

Why do you train local mine clearance experts?

Working with mine clearance experts from local communities makes it easier for local people to accept our operations. We give priority to local staff because they're very committed and have a personal stake in the work they do. Many mine clearance experts have been directly affected by





contamination. For example, Fatou Diaw in Senegal became HI's first female clearance expert because her cousin fell victim to an explosion when she was a child. It had a big impact on her.

Mine clearance training requires a lot of discipline, even though the training doesn't last very long, but we're proud we can rely on national staff to implement our operations.

Some former fighters now work as humanitarian mine clearance experts...

A number of former fighters are engaged as humanitarian mine clearance experts, but in very specific circumstances, as part of a well-advanced peace process. Former soldiers or members of armed groups can join mine clearance teams and risk education and community liaison teams to help them reintegrate society and work. This also helps build lasting peace and encourages communities to encourage communities to accept each other.

What will be the main mine clearance challenges in 2022, the 25th anniversary of the Ottawa Convention?

Most African countries have ratified the Ottawa Convention since March 1999. More than twenty years after the convention was ratified, they are still struggling to free their country from mines, which is why many of them have asked to extend the deadline to finish clearing these mined areas. Most of them have a cut-off date of 2026 to complete the work. Deadlines are quickly approaching and preparations need to start immediately. This year, the 25th anniversary of the Ottawa Convention, is the ideal time to try and generate as much funding as possible to help countries fulfil their clearance obligations.

⁵ EOD or Explosive Ordnance Disposal. There are four mine clearance levels. EOD 4 is the highest.

Testimony

“I never thought I’d work as a mine clearance expert”

Jennifer Diaz Gonzalez, 26, has worked as a humanitarian mine clearance expert at HI since 2017. She works in the region of Vistahermosa, where she grew up and lives with her 3-year-old daughter

“I never thought I’d work as a mine clearance expert. It’s demanding work and mistakes can come at a heavy price. When they first advertised for people, I applied mainly because I really needed a job. They say it’s men’s work - it’s like being in the army, you need to wear heavy equipment and walk for long distances. I proved them wrong. Female

mine clearance experts do the same work as their male colleagues. In Colombia, there are seven female mine clearance experts in HI’s team. We know how to destroy explosive devices – I’m really proud of that.

Keeping stress under control

The work scared me at first. I can deal with it now, and I work to the best of my ability. My family and friends will be there when I come home. I’ve grown very fond of this job over the years. We work in six-week cycles and then rest for two weeks. But after a fortnight, I start to miss my colleagues - I want to get back into the action again. I’ve fallen in love with this work. My colleagues are like a second family to me.

We’re ready at 6 o’clock every morning. We check our instruments and equipment (demining aprons, helmets, metal detector, etc.), organise our area and then take turns clearing the mines. We need to pay close attention to our surroundings, including explosive engines, of course, but also animals like snakes.



Managing a mine clearance team

I was made team leader two months ago. I manage a group of ten mine clearance experts and I'm responsible for the safety of my colleagues including their mental and emotional health. It's important for me to develop a relationship of trust with them and to know I have the support of my colleagues. There needs to be a good atmosphere in the team and we're a close-knit group.

Local people really appreciate what we are doing. We need the support of local communities because we can only work if they accept us and allow us to stay. We can do this because we're all from the same region. It is not always easy to be accepted and a big part of our work involves explaining what we are doing and forming

a relationship of trust with communities. Besides mine clearance, HI helps people to open small stores and restaurants, and to grow coffee or strawberries. We get rid of the mines so farmers can grow coffee and breed cattle in safety. It's a wonderful initiative."

Jennifer Diaz manages a team of ten mine clearance experts.

- **Current clearance area: 11,000 sq.m.**
- **Location: Department of Meta, Vistahermosa region Forest and mountains.**



Drones: a revolution in humanitarian mine clearance

HI and its partner Mobility Robotics have been testing the use of drones since 2019, marking a new milestone in humanitarian mine clearance. HI launched its first operations in northern Chad in 2019 and 2021, followed by tests in Iraq in September 2021. The manager of HI's drones project, Xavier Depreytere, tells us about the challenges the teams face.

What is the added value of drones?

A standard clearance survey takes several days, even weeks. A drone can map several square kilometres in a single day and provide teams with visual cues as to whether an area is contaminated or not. Surveyors can also remotely inspect hard-to-reach areas without putting their lives at risk. A more targeted survey technique using small drones saves mine clearance teams years of work and millions of euros in humanitarian expenses.

What are the results after two years of tests in Chad?

Over two years, HI tested drones to map and survey hazardous areas in the deserts of northern Chad. We took photos and videos remotely to help mine clearance experts survey hard-to-reach areas and identify suspicious objects on the ground. We have also created high resolution maps to check for signs of contamination such as craters and the impact of exploded mines.

How do you spot mines using a drone?

We look for clues of mine explosions on the ground that might indicate contamination by explosive remnants or other mines. Animals can trigger explosions. In Chad, camel carcasses might point to the existence of minefields. If we spot a burnt out and abandoned vehicle, we take a closer look at the immediate area. Local people sometimes mark out a suspicious area by placing stones around it to warn others to stay clear. We also look for signs of





non-contamination, like a road with traffic. If there were mines, we would see the detonation marks. But no signs does not always mean no mines.

How do you deal with mines buried in the ground?

Mines are almost always intentionally buried, although some are covered by earth and sand over time. With its partner Mobility Robotics, HI has achieved a world-first by using a heat sensor mounted on a small drone to spot buried anti-personnel and anti-vehicle mines. These flights were made in real desert conditions in conjunction with mine clearance operations.

How does it work?

Thermal imagery helps us spot thermal “anomalies”, a difference between the temperature above a buried mine and the surface of the surrounding soil. In the desert, these anomalies are more visible at night when the temperature drops above the buried mine. Several factors can interfere with this analysis, however, such as weather conditions, the type of mine and the depth it is buried at.

Do you need special training to pilot drones for this activity?

We use commercially available drones and sensors. All pilots must be trained by

Achievements from HI project in Chad (2019 – 2021):

- 100 drone flights in 65 places
- Journeys to hazardous areas from the base lasted between 30 minutes and one-and-a-half days

- More than 35 polygon areas and 30 linear kilometres of minefields mapped
- More than 2,500 mines located using the heat sensor
- 6 Chadian mine clearance experts trained to use drones

a professional and need the right skills to operate safely in hazardous environments. They also have a good working knowledge of the situation they are operating in, including its geography, the local climate, conflict history, local legislation, and flying techniques: the height and optimal flight parameters are different depending on what we are searching for, for example. You need even more sophisticated skills to use a heat sensor because flights are often at night. You also have to know how to interpret thermal anomalies, like a surgeon with an X-ray.

Are you still testing?

Yes, we are still doing tests in different regions of Iraq. In November, for example, we were working in Sulaymaniyah, a region of Iraqi Kurdistan, contaminated since the Iran-Iraq conflict in the 1980s. Most minefields are in hard-to-reach mountainous areas. With our partner Mobility Robotics, we produce maps and surveys using small drones to support a team from the regional mine clearance centre. This mission helped us to understand the added value of drones in mountainous regions, which are very different to the Chadian desert, but also to train local staff to use drones.

Drones can:

1. Fly over and remotely photograph hard-to-reach areas
2. Produce very-high-resolution maps of a hazardous area
3. Film and observe in real time, on the pilot screen, ground impacts or vicious devices that can be surveyed using a zoom
4. In certain situations, locate the position of buried mines using a heat sensor

Test locations: Sulaymaniyah, Duhok

Local partners: Kurdish mine clearance authorities, Norwegian People's Aid

Length of project: 36 months

Co-developer: Mobility Robotics

Other projects in 2022: Drones will support HI's mine clearance operations in Lebanon and Senegal.



Interview

“After a conflict, we can substantially reduce the number of accidents by providing vulnerable people with information”



Céline Cheng, risk education manager at HI, explains what risk education entails, 25 years after the signing of the Ottawa Convention.

How do we provide risk education?

It is mainly provided by mobile teams - small teams of two to four people - who travel through the countryside, stop at villages, to reach out to local people. They provide them with information on explosive devices, how to recognise them and the behaviour to adopt when they find one.

These teams may visit schools because children are naturally curious and often put themselves at risk. They can also arrange with local authorities to hold a session in a district or village. One awareness-raising session can last between twenty minutes and an hour. We use a visual to show them what an explosive device looks like, and we explain best practices to avoid accidents,

such as keeping away from the device, calling the emergency number if there is one (adults), or telling an adult (children).

We run awareness campaigns using what we commonly find in the areas where the campaign is implemented. Improvised devices do not have a standard design. A booby-trap device can be hidden in a soft-drink can or soft toy, or triggered by a cable. HI always adapts its risk education sessions to the threats faced by the local population in a given region.

How has risk education changed in recent years?

Risk education programmes are no longer exclusively about anti-personnel mines. They include an increasing number of improvised explosive devices. Since improvised devices can take a variety of forms, this is not an easy task. It is hard to say what an improvised explosive device looks like. We try to make people aware of anomalies in their environment: if a busy district or street is suddenly deserted, for example, it could be a sign of danger.

Do we work with displaced people?

This has always been a challenging part of our work: we often talk to displaced families who have fled fighting and who are returning home. We do not always know where they are going. In Afghanistan, for example, our mobile teams work in transit camps that organise the return of Afghans who have fled abroad and want to return home. They often have serious problems to worry about, such as the state of their home, how to find their relatives, or what papers they need to go back. They do not have time to sit down and listen to us for hours on end. So, we organise ten-minute emergency sessions. When they return to their villages, they risk being faced with contamination by mines, explosive remnants of war or improvised explosive devices.

Do you use innovative technologies as part of risk education?

Yes, we post messages on social media accounts such as Facebook. In Iraq, for example, we have posted prevention messages on the HI Iraq account to target a wide audience. They take the form of recaps of information with a phone number to call the authorities if you spot a bomb and weapons clearance experts need to intervene. The post says: “Beware: if you see a suspect device... Call the weapons clearance centre.” The video has had 1.2 million views. We have adapted to COVID-19 by focusing more on recent technologies and media by broadcasting messages on television, radio and social media, and by telephone.

Which are your priority countries for risk education?

We focus on conflict zones where the threat from improvised devices is very high and contamination is incredibly widespread. In 2022, we want to expand our risk education activities and adapt them to other areas where HI works, such as Africa, where Small Arms and Light Weapons (SALW) proliferation is a big problem. We are assessing needs and the feasibility of risk education on these weapons and conflict transformation projects in the Central African Republic. We also want to teach people how to protect themselves during a conflict, such as by keeping away from windows or making a bomb shelter.

List of countries where HI implements risk education projects:

Burkina Faso, Colombia, Iraq, Laos, Lebanon, Libya, Myanmar, Syria, Thailand, Yemen.

HI's risk education team worldwide: more than 60 people



The mine clearance toolkit



Demining apron: made from kelvar fibres, the apron protects personnel from explosions; since they do highly detailed work, mine clearance experts do not wear gloves.



Secateur: used by mine clearance experts to clear dense vegetation before probing the ground for mines.



Protective helmet: equipped with polycarbonate visors, helmets protect against explosive fragments.



Drones: remotely map and survey hazardous areas; drones make it easier for mine clearance teams to operate safely and more effectively in very-high-risk areas.



Metal detector: locates metal objects beneath the surface.



Probe: used by mine clearance experts to test the ground after a metal detector finds a metal object; the probe is approximately twenty centimetres long and

always used horizontally to avoid putting pressure on the mine.



Demining tank: a remotely controlled demining tank that clears vegetation and detonates buried mines by digging rotary blades into the ground; the armoured machine is

designed to resist mine explosions.



Red flags or panels: markers for areas where mines are still active before they are rendered safe.



Ruler: a metre rule placed on the ground in front of mine clearance experts as they move forward in stages to probe the soil, metre by metre.

Composition of a mine clearance team:
A mine clearance team is composed of a leader and five to ten mine clearance experts.

Mine clearance experts are trained in modern technology and new tools throughout their careers. They always work in teams of two: the first probes the ground metre by metre, while the second supervises the work of his or her colleague from behind. A mine clearance expert needs at least five years of experience before they can become a team leader. The team leader is responsible for the safety of their team members and a medical team is always on duty at the base in case of emergencies.

HI Spokespersons

These people are HI's experts in mine action, and are available for media interviews upon request.



Perrine BENOIST
Perrine is the Director of the Armed Violence Reduction Division at HI.

The division is responsible for mine clearance, risk education, conflict transformation, victim assistance and advocacy. Perrine previously managed humanitarian programmes for HI in the Sahel, Central Africa and the Grands Lacs region. Perrine has a master's degree in Conflict Analysis and Peacebuilding and a doctorate in Conflict Resilience.

Languages: English and French.



Gary TOOMBS
Based in the United Kingdom, Gary is a specialist in mine clearance and the destruction of explosive devices and munitions for the Armed Violence Reduction Division at HI.

Enjoying more than 30 years of experience, Gary has led humanitarian operations in a dozen countries, including Iraq, Syria and Colombia. Gary provides technical support on humanitarian mine action to national authorities and other NGOs. He works to support explosive weapons victims by providing special victim assistance services. Languages: English, Spanish, Arabic.



Emmanuel SAUVAGE
Based in Dakar, Emmanuel Sauvage is Programme Director for West Africa.

Until September 2021, Emmanuel was Director of Armed Violence Reduction at HI. Emmanuel has more than 27 years of experience in humanitarian action, including twenty in the field of Armed Violence Reduction at HI and for the UN Mine Action Coordination Centre. He has worked in Bosnia-Herzegovina, Iraq, the Democratic Republic of Congo and as Regional Coordinator for Conventional Weapons Risk Reduction in the Middle East. Languages: English, French, Spanish, Bosnian/Croatian/Serbian.



Seydou GAYE
Based in Dakar, Seydou is a specialist in the collection of explosive devices and weapons and munitions risk management.

Seydou has worked for HI since 2007. He has occupied several posts, from community liaison manager to mine clearance operations supervisor. He provides technical support to humanitarian mine clearance projects in French-speaking African countries. Language: French.



Xavier DEPREYTERE
Based in Brussels, Xavier Depreytere is the leader of the Armed Violence Reduction Innovation project at HI.

An engineer by training, Xavier joined HI in 2018 and heads the humanitarian mine clearance drone testing project. Until May 2021, Xavier managed tests in Chad in support of the mine clearance operations led by HI. He is now running drone tests in Iraq, replicating the experience gained in Chad in new environments with diverse types of explosive devices. Languages: English and French.



Arturo BUREO
Arturo is HI's Operations Manager in Colombia, where he manages humanitarian mine clearance and victim assistance operations as part of a "conflict

transformation" approach.

Arturo has more than ten years of experience in humanitarian mine clearance. He has supervised mine clearance and victim assistance projects in Laos from HI's offices in Brussels. Previously Operations Coordinator and Operations Development Manager in Sri Lanka, he has designed and implemented multiple community reconciliation projects. Languages: Spanish, English, French and Dutch.



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About HI

HI is an independent international solidarity organisation that has been working for 40 years in situations of poverty and exclusion, conflict and disaster. Working alongside people with disabilities and the vulnerable, it acts and advocates to meet their basic needs and improve their living conditions. It is committed to promoting respect for their dignity and fundamental rights. Since its creation in 1982, HI has set up development programmes in more than 60 countries and intervenes in numerous emergency situations. The network of 8 national associations (Belgium, Canada, France, Germany, Luxembourg, Switzerland, the United Kingdom and the United States) works constantly to mobilise resources, co-manage projects and promote the principles and actions of the organisation. resources, co-managing projects and promoting the organisation's principles and actions. HI is one of the six founding organisations of the International Campaign to Ban Landmines (ICBL), co-winner of the 1997 Nobel Peace Prize and winner of the 2011 Conrad N. Hilton Award.

Useful links :

[International Campaign to Ban Landmines](#)

[United Nations Mine Action Services](#)

[Landmine Monitor](#)

www.hi.org

