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The Middle East
WITH SPECIAL FOCUS ON
IRAQ AND SYRIA

Survivor Assistance
» Disability Rights in Iraq
» Accessibility in Tajikistan
» Integrated Peer-support

Plus: NOTES FROM THE FIELD and RESEARCH & DEVELOPMENT
The Journal of ERW and Mine Action
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Cover Photo
An elderly Yazidi woman arrives with her family into Newroz refugee camp, situated next to the town of al-Malikyah in Rojava, Syria.
Photo courtesy of Mackenzie Knowles-Coursin/IRIN.

The Journal of ERW and Mine Action is a professional trade journal for the humanitarian mine action and explosive remnants of war (ERW) community. It is a forum for landmine and ERW clearance best practices and methodologies, strategic planning, mine risk education and survivor assistance.

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In September, I attended the First Review Conference on the 
Convention on Cluster Munitions (CCM) in Dubrovnik, Croatia, 
marking five years since the First Meeting of the States Parties to the 
CCM. Cuba announced that it was to start the accession process while 
Colombia announced that it had acceded to the CCM. Furthermore, it 
was reported that cluster munitions were used in five countries around 
the world in 2015 (Libya, Sudan, Syria, Ukraine and Yemen).

In this issue of The Journal, we keep our global lens wide, 
turning our attention to Eastern Europe, Iraq, Lebanon, Syria 
and Tajikistan. We have a fantastic selection of articles about the 
Middle East, including a timely article from Nikolaj Søndergaard on DanChurchAid’s (DCA) remote risk education program in Syria, 
in which DCA uses a network of journalists and activists to assess 
and tailor their risk education curriculum for the hard-to-reach 
populations in war-torn Syria. In addition, Tammy Hall, head of 
Danish Demining Group (DDG), outlines DDG’s collaboration with 
the Danish Refugee Council to integrate mine and explosive remnants of war risk education into existing humanitarian efforts in 
Iraq. And from MAG (Mines Advisory Group), Sean Sutton’s photogenic essay depicts MAG’s operations in Lebanon, specifically 
with a female demining team.

For this issue’s Feature section, we focus on survivor assistance with 
an article from Reykhan Muminova (UNDP Support to Tajikistan Mine Action Programme) on Tajikistan’s progression toward signing the U.N. Convention on the Rights of Persons with Disabilities as they address physical accessibility issues and build capacity for medical professionals in mine-affected areas while also increasing psychological support to landmine survivors and persons with disabilities. And Amir Mujanovic from Landmine Survivors Initiative (LSI) discusses LSI’s implementation of a three-pronged, peer-support assistance system to meet landmine survivors’ needs in Bosnia and Herzegovina.

It’s an exciting time here at CISR as we approach our twentieth anniversary. In recognition of the evolution and expansion in the field of mine action in the past 20 years, we are excited to announce that the title of The Journal will change to The Journal of Conventional Weapons Destruction beginning with issue 20.1 (Spring 2016). The change reflects our sector’s drive to combat the proliferation of illicit conventional weapons, including small arms and light weapons, in areas of the world suffering from violence and political instability. The Journal continues to be a clearing house of information for the humanitarian demining and conventional weapons destruction community as we work toward promoting peace, stability and economic development in post-conflict societies.

Ken Rutherford
Remote Risk Education in Syria

Unable to be physically present in Syria due to ongoing conflict, DanChurchAid (DCA) is collaborating with a network of journalists and activists in order to assess the need for risk education in the country. By framing its risk education curriculum and strategies around this information, DCA’s mine action initiatives are tailor-fit for the hard-to-reach populations of war-ravaged Syria.

by Nikolaj Søndergaard [DanChurchAid]

Due to security concerns, removing explosive remnants of war (ERW) in most parts of war-torn Syria is nearly impossible; however, the need for this type of work is enormous. After four years of conflict, the threat of unexploded ordnance (UXO) is a part of daily life for thousands of Syrians and will be for many years. Opportunities to address this problem are scant, pushing mine action agencies such as DanChurchAid (DCA) to think outside the box.

Since 2014, DCA has piloted an innovative project delivering safety messages to hard-to-reach populations inside Syria. The Risk Education Ambassador Project is modeled after the Local to Global Protection (L2GP) method, which seeks to understand security issues in humanitarian crises from a local perspective while adapting the global humanitarian response accordingly.¹

International Media Support (IMS), a Danish nongovernmental organization, and Radio Rozana, an independent, Paris-based Syrian radio station with a network of freelance journalists in Syria, implemented the Risk Education Ambassador Project. Launched in June 2014, the project aimed to deliver risk education and create awareness of the threats posed by ERW in Syria. Additionally, the program was a trial to determine if this method would help them better understand the situation inside Syria and to develop new ways to diminish the risks. Nineteen new Syrian risk education ambassadors were selected and participated in two workshops in a country neighboring Syria.² The majority of the 19 participants were journalists in contact with IMS or associated with Radio Rozana, while the remaining participants were activists who were already spreading information voluntarily inside Syria. After the workshops, participants returned to Syria to carry out the risk education initiatives.

DCA risk education coordinator Teresa Tavares, who was responsible for the project says, “We knew that there are Syrian media that are very innovative. They are, among other things, good at using social media and radio spots to spread information. We thought that we could use these and other methods to disseminate relevant safety messages. At the same time it would be a strength to cooperate with people who know the context and have access to some of the hard to reach places we would not otherwise have access to.”³

Working Remotely

Before starting the project, DCA needed information about the ERW situation inside Syria, which is where the L2GP approach first came into use during the project. The initial step of the process always involves asking affected individuals to name the most important threats and challenges they face. For the Risk Education Ambassador Project, obtaining this information was crucial to defining the shape and content of the workshop sessions as well as the risk education messages themselves, thus ensuring coherence with local knowledge levels. DCA therefore distributed a questionnaire survey among the 19 participants prior to the first workshop in order to gain a better understanding of their perception of the ERW threat inside Syria and how to mitigate it.

The result of the questionnaire showed that even without the ability to conduct a survey inside Syria, obtaining useful information on the threats and potential solutions outside the country is possible. The Syrian journalists and activists had significant knowledge of the ERW dangers facing the Syrian population, including a thorough understanding of the spread of ERW resulting from recent conflict as well as the most ERW-affected and accident-prone areas. The first Risk Ambassador Workshop was thus tailored to suit their knowledge levels.

“These journalist and activists came directly from the areas of fighting, and they have experienced it all up close. They live with the barrel bombs, suicide attacks, etc.,” explains Tavares.
Solutions Framed Around Survivors’ Needs

Part of the L2GP concept is utilizing the fact that people living in war-torn regions often develop creative coping and survival mechanisms and tactics. With a little assistance, the best and most innovative methods can disseminate further and benefit many more people. DCA’s experts provided the expertise and professional backbone in designing the exact type of information and quality assured content for distribution. However, the participants’ were responsible for developing actual solutions and implementing the project.

The Syrian journalists and activists were enormously resourceful and creative. Many of the participants had significant experience in communications. They were extremely enthusiastic about the trainings, and quickly absorbed the recommended ways of communicating messages related to building community safety and resilience. The main objective of the first workshop in the spring of 2014 was to draft work plans for the participants. Participants had different ideas and wishes regarding how they wanted to work in Syria; thus the workshop was used for planning the work and setting up mechanisms for quality assurance. It mostly focused on sharing knowledge, forming a network and planning the reporting of the activities.

“We created a Facebook group, which we could use to keep contact with the network, and we created action plans for each participant, so we knew what activities were planned and should be reported on,” says Tavares.3

Designing Risk Education With Creativity

DCA employees organized the workshop, and gave lessons on recognized and proven methods in disseminating safety messages. Special emphasis highlighted how to target different audiences using various messages and techniques. For example, risk education targeting children utilizes different methods than risk education for adults.

The second workshop took place in September 2014, and served as a means to assure the quality and standards of the work that had already been carried out as well as to help participants develop concrete activities for further exploration. DCA facilitators encouraged the free flow of ideas, and were awed by the participants’ investment and enthusiasm.
“There were some who created radio spots, while others used social media to get the safety message out. Some of them have created posters, and some got safety messages into a children’s magazine that have been spread in some of the IDP [internally displaced persons] camps inside Syria,” Tavares explains.3

DCA brought a graphic designer from its headquarters to assist the risk education ambassadors with knowledge and input on how best to convey messages graphically. Some examples of the initiatives resulting from this process include seven radio spots produced and broadcast inside Syria; articles and graphics published in Syrian magazines, newspapers, and a children’s magazine; and posters and flyers distributed inside Syria featuring ERW illustrations. DCA’s L2GP expert also attended the workshop.

**Obstacles and Successes**

Despite participants’ enthusiasm, the program faced many difficulties. The primary challenge is that the participants live in a war zone, which means that some of them can get wounded or even killed, or may leave the project for other reasons. Others have received an opportunity to leave Syria and have done so. Losing participants is a basic condition of this project, and DCA has tried to recruit new participants along the way. DCA has the utmost respect for the participants who take the risk to make a project like this reality. Additionally, the border between Syria and the country of the workshop is often closed, further complicating this project.

When working directly in war-affected areas is impossible due to security concerns, humanitarian agencies such as DCA can remotely support existing local initiatives. Even though this project faced challenges, DCA was able to provide lifesaving security messages to at-risk populations which were otherwise on their own. Similarly, DCA harnessed information from participants, gaining a fuller picture of the situation inside Syria which will benefit future projects. Many Syrians are very well educated and resourceful, making Syria a good place to use this approach.

“They are young educated people who just want to help their community. They see a problem, and they create solutions,” says Tavares, who believes the pilot project has big potential.3
There is already a proven spillover effect as the safety messages continue to spread inside Syria, almost a year later. During the project phase, safety messages reached approximately 38,000 beneficiaries by radio and 33,000 by articles, cartoons, posters, etc. People now know what to do when they encounter UXO.

According to Tavares, “The conclusion is that, for very little money, we can have an impact and reach some places that are otherwise very difficult to reach.”

No plans exist to orchestrate DCA’s workshops in other countries, as the Syria program is unique to its current, extreme political situation. However, with support from Norwegian Church Aid, DCA is running a project in Mali for the northern Kidal region—an area humanitarian workers also cannot access. In Mali, with support from local partner organizations, DCA selected nine qualified local persons in Kidal and flew them out of the area. Participants were taught how to collect information and make surveys to learn the locations of contaminated areas. Once given the green light to conduct clearance, teams can move in more quickly, allowing persons who fled to return home sooner.

There are significant challenges to working in Syria, e.g. instability inside the country and along the borders. DCA’s Syria program is evolving to meet the changing nature of the political scene. The Risk Education Ambassador Project is evolving along with these waves of changes.

See endnotes page 66

Nikolaj Søndergaard is a Danish journalist and worked for various media before he came to DanChurchAid (DCA) in 2013. Since then, he has been working as a communication officer with responsibility for covering DCA’s mine action activities.

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Landmines in Croatia Pose Threat to Incoming Refugees

After Hungary formally closed its border with Serbia on 15 September 2015, refugees fleeing conflict in the Middle East, Central Asia and Northern Africa have turned next to Croatia as a gateway to reach countries such as Sweden and Germany. The influx of refugees traversing the areas near the Croatia-Serbia border has raised concerns that refugees will encounter residual landmine contamination in Croatia as they make their way to Slovenia and Hungary. The contamination dates back to the four-year conflict which followed the disintegration of the former Yugoslavia from 1991 to 1995. The Croatian Mine Action Centre (CROMAC) estimates that there are more than 50,000 mines remaining in Croatia, amounting to a total suspected hazardous area of 496.8 km² that spans 75 cities and municipalities across 10 counties.

According to CROMAC, all minefields are surrounded by posted warning signs. However, there is concern that refugees unfamiliar with the terrain and the signs’ meaning may inadvertently wander into the fields. In order to spread awareness of this risk, officials are disseminating warnings and maps detailing the contamination to the refugees as they enter the country at the official border crossing points. Still, this method may not reach all refugees entering the country—particularly those that cross the border illegally. Multiple civil initiatives and groups have issued warnings via Facebook and other mobile social media apps and posted warnings along the Serbian route to warn incoming refugees of the contamination ahead in Croatia. Although Hungary reopened its main border crossing with Serbia after a week of political negotiations, many refugees are still passing through Croatia. The first surge of refugees entered Croatia on 16 September 2015, one day after Hungary closed its southern border with Serbia. As of 28 September 2015, about 78,000 refugees have entered the country.

See endnotes page 66

~ Megan Hinton, CISR staff
Integrating MRE Into Humanitarian Responses in Iraq

As a result of conflict in Iraq, the safety and well-being of millions of refugees and internally displaced persons is at stake due to explosive remnants of war (ERW). In order to mitigate that threat, the Danish Refugee Council enlisted the help of the Danish Demining Group to incorporate mine and ERW risk education into existing humanitarian efforts in Iraq.

by Tammy Hall [Danish Demining Group]

The ongoing conflict in Iraq created a protracted humanitarian crisis throughout the country. According to the 2015 Iraq Humanitarian Response Plan, in excess of ~8.2 million people in Iraq require immediate humanitarian support as a direct consequence of violence and conflict. The U.N. Refugee Agency estimates that approximately 50 percent are refugees who fled the conflict in Syria or are internally displaced persons (IDPs) from conflict-affected communities inside Iraq. Among the basic human necessities within the context of this emergency is the vital need for safety due to the threat posed by explosive remnants of war (ERW). Consequently, mine/ERW risk education (MRE) is recognized as an integral component of the humanitarian response to this violent conflict.

The traditional humanitarian response effort is far-reaching and comprehensive. However, a protection gap normally exists in situations where mines, ERW and even improvised explosive devices (IEDs) constitute a serious risk for refugees and IDPs. In Iraq, refugee and IDP camps are located in some of the areas most intensely contaminated by explosive ordnance (see Figure 1). The ‘protection’ umbrella ensures peoples’ safety and security and focuses
on preserving their dignity. This perspective explicitly recognizes the need for integrity (where both psychological and physical aspects must be considered), and it attempts to bring about the empowerment of vulnerable individuals. However, humanitarian organizations that focus on protection often lack expertise in technical areas related to explosive weapons. The safety and security needs of refugees and IDPs moving through dangerous areas may remain undressed as a result.

As a response to the current humanitarian emergency in Iraq, the Danish Refugee Council (DRC) established three community centers in Dohuk, Erbil and Zakho, and assists local governments with the management and administration of 12 camps in Dohuk and Erbil. In order to inform refugees and IDPs about the dangers of mines and ERW when traveling through areas around the camps or upon return to their former homes, Danish Demining Group (DDG) will supply an MRE component to the overall humanitarian assistance effort. Working in close cooperation with the Iraqi Kurdistan Mine Action Agency (IKMAA), DDG intends to employ dedicated MRE teams already working inside the camps and community centers managed by DRC to provide MRE to refugees.

DDG identified three key challenges:

1. Understanding the needs on the ground and accessing relevant data.
2. Building trust and longer-term relationships with target groups that ensure constructive information exchange.
3. Meeting difficult logistical conditions with limited resources.

In order to better meet these challenges within humanitarian emergency environments such as Iraq, DDG developed an approach that integrates MRE into the humanitarian response. DDG’s role as a specialized unit within DRC facilitated not only the provision of MRE into the broader protection framework, but also planning, administration and follow-up as part and parcel of the humanitarian effort.

**Needs Analysis and Data Gathering**

Within this modality, one joint-country strategy is developed for the integration of MRE as a protection issue. The combined efforts of DRC and DDG personnel carry out a joint-conflict analysis that considers future trends and developments, in particular the anticipated movements of conflict-affected populations. One of the key strengths of this approach is that a more sophisticated analysis of peoples’ needs is integrated into the planning of an overall protection strategy and response. DDG brings specialized knowledge of weapons and armed-conflict dynamics to DRC’s core protection work in addressing the needs of vulnerable populations, especially refugees and IDPs.

DRC has a long-established presence in Northern Iraq. It has tracked the movements of vulnerable populations and carried out needs assessments since 2003. However, with DRC’s office about to close and programming in Iraq almost completely phased out by 2014, new violence erupted. DRC’s humanitarian program in Iraq was reinforced to deal with the significant humanitarian needs related to the violence prompted by insurgent groups. In addition, the worsening conditions in Syria in 2014 and 2015 created an influx of refugees, who...
were crossing the border into Iraq in search of better conditions despite the dangers in Iraq.

DRC initiated a targeted humanitarian response to the Syrian crisis in March 2013 and later to the Iraq crisis in late 2014. The continuing unrest and instability in Syria and Iraq has increasingly eroded civilian safety and living conditions. Within this insecure environment, reaching target populations with the greatest need safely is a considerable challenge. DRC has adopted a community-based methodology in Iraq, focusing on balancing the special protection needs of the most vulnerable with support for basic communal services. This work requires a high degree of attention for the safety of DRC staff, as well as communities, so that DRC’s humanitarian assistance workers do not suffer attacks or get caught up in the on-going violence.

DRC is providing assistance to Syrian refugees and Iraqi IDPs in the form of non-food items distribution, and the provision of services such as water, sanitation and hygiene, shelter, livelihoods training, and financial assistance, as well as standalone protection activities (such as monitoring the safety and security of individuals, legal aid and documentation work).

Given the large number of Syrian refugees, the work DDG and DRC carry out inside Syria also serves to inform regional analysis and needs-assessments. This in-depth understanding of the overall assistance requirements of target populations helps during the initial steps of information gathering.

However, data gathering related to the potential threats faced by IDPs and refugees remains challenging. Therefore, DDG will also initiate a structured data-gathering process that will later serve to refine the development of MRE curricula and material, and to monitor and assess the outcomes of the MRE program. Despite the tremendous past investment in Iraq’s national mine action capacity, it remains difficult to obtain recent disaggregated casualty data that would inform the design of an effective MRE program, including:

- Who is being injured? (disaggregated by gender and age group);
- Where was the geographical location of the accident? (as precise as possible);
- What was the nature of the device? (i.e., anti-personnel or anti-vehicle mine, unexploded ordnance, IED);
- What was the victim doing at the time of the accident? (traveling, farming, collecting wood, etc.);
- What was the type of injury? (according to injury patterns assessed by the International Committee of the Red Cross).

While implementing the initial phase of the MRE program, DDG will also utilize MRE teams to gather information on the expected threat in the various areas of return, as well as information on the knowledge, attitudes and practices of those groups. This will help when designing targeted messages to fill existing gaps in available information.

Building Relationships and Trust

In the context of an ongoing conflict, it can also be challenging to collect information from vulnerable populations that may fear revealing sensitive information regarding explosive contamination. The integrated structure of DRC and DDG provides an opportunity to build trust and enhance the relationship between trainers providing MRE and target groups, since they are seen as an integral piece of the practical help and assistance provided to refugees and IDPs. In Iraq, DDG can use DRC’s protection and community-service teams to gain access to the target beneficiaries, and receive initial advice and orientation on their basic needs. They can also understand more about the leaders and opinion-makers, which can greatly enhance the effectiveness of targeting key individuals and groups.

One particularly sensitive issue in the Iraqi context is the use of victim-activated IEDs in homes and in areas surrounding abandoned settlements. Because of relationships of confidence established with target groups, this issue is treated sensitively. In addition, as information changes or evolves, ongoing and longer-term access to the target groups
can greatly improve the quality of information received from affected locations, where people may be returning from time to time to monitor their property and belongings. The delivery of an IED risk education package must be carefully monitored through camp-qualified MRE trainers, but this monitoring can be reinforced over time using the broader assistance frameworks operating in the camps.

**Doing More with Less**

Finally, this DRC-DDG integration allows MRE implementation to ensure a more cost-effective setup, taking advantage of economies of scale and existing security frameworks in high-risk areas such as Iraq. For example, elements like the costs involved in setting up secure office space can be shared by the various components of the program. In addition, where finance and logistics can be challenging in terms of finding appropriately trained personnel and in providing sufficient oversight for financial transactions and management for resources and assets, a shared setup can reduce basic infrastructure costs. Further, key elements of programming, such as evaluation and beneficiary feedback structures, can be shared through joint implementation.

**A Comprehensive Response**

While integration does not solve all the problems of operating in a challenging emergency environment such as Iraq, this combined structure does allow for a stronger and more appropriate response to vulnerable groups. Alternatively, coordination and integration also have some costs. The need for enhanced information sharing, more complicated approval and accountability mechanisms, and the challenge of navigating through more complex information all impose additional burdens on busy staff members. However, mainstreaming MRE into support for the same vulnerable populations already being assisted appears worth the effort of these additional complexities.

*See endnotes page 66*
MAG: Mine Clearance in Lebanon

by Sean Sutton | MAG (Mines Advisory Group) |

Mines, cluster submunitions, and unexploded ordnance (UXO) contamination plague Lebanon as a result of a 15-year civil war ending in 1990, two Israeli invasions in 1978 and 1982, and the July-August conflict with Israel in 2006. The Lebanon Mine Action Centre (LMAC) identified 2,598 mined areas covering 191,000,000 sq m of land. Following non-technical survey (NTS) and clearance operations, there is an estimated 30,316,080 sq m of suspected hazardous area remaining. Although some cluster munition contamination remains from the 1982 conflicts, much of the contamination is the result of the 2006 conflict with Israel, during which nearly four million cluster submunitions were fired into Lebanon. Cluster munition contamination has a huge socioeconomic impact on Lebanon’s agricultural sector; about 1,438,259 sq m of unused land will be available for crop and livestock cultivation after cluster munition clearance is complete.

With LMAC’s supervision, MAG (Mines Advisory Group) began working in Lebanon in 2000. Its clearance efforts are a part of the implementation of the Lebanese Mine Action Strategy 2011–2020, which aims to clear all explosive remnants of war (ERW) from Lebanon by 2021. MAG has cleared about 17 million sq m of land since 2006. Between January and May 2015, MAG removed and destroyed 193 cluster bombs and 33 landmines. MAG operations in Lebanon include minefield marking, risk education, NTS and battle area clearance (BAC) prioritized by LMAC with the assistance of machinery and mine detection dogs. The organization also carried out a national preclearance cluster munition survey of cluster munition strike areas, the only assessment of its kind conducted since the 2006 conflict with Israel.

MAG’s clearance teams are composed of local citizens, allowing them to contribute to the rehabilitation of their own country. MAG also emphasizes gender equality by incorporating women into its teams, which counters the widespread perception in Lebanon that explosive ordnance clearance is dangerous work suitable only for men. MAG employed its first mixed-gender clearance team in 2011. MAG has since expanded its mixed-gender operations to include three BAC teams, one mine action team (MAT), one mixed-gender mechanical team and three community liaison teams. The female searchers are proud that their profession challenges their society’s perception of what work is suitable for women. When interviewed in 2013, Fatima Ghandour of BAC 3 said, “The community does not easily accept the idea of a woman working in danger but, slowly, this must change and we will help with that change. I am able to do the job as well as a man. I do the same job, on the same ground.” Women also assume leadership roles in the MAG clearance teams. According to Fatima Bahmad, who was once a searcher on the BAC 3 team and is now deputy team leader of MAT 2, “I’m very happy with my job with MAG…As deputy team leader I have new responsibilities—it’s very different from being a searcher.” A single mother, Bahmad’s position at MAG allows her to support her family. MAG intends to remain in Lebanon for the foreseeable future to support LMAC’s Mine Action Strategy to clear the country of all unexploded cluster munitions by 2010 and mines by 2021. See endnotes page 66
In March 2015, a group of seven boys were playing when one of them unintentionally set off a cluster bomb submunition dropped nearly a decade ago in 2006. The resulting explosion injured all but one of the boys, and their suffering continues months later. Cousins Hassan, Hassin and Nabil are pictured here three months after they were injured in the explosion. Hassan is recovering from an operation to take fragments out of his brain and needs at least one more operation to remove fragments from his lung. Hassin suffered serious injuries on his face and chest that required reconstructive surgery to his jaw and will require additional operations in the future. Nabil had part of his leg reconstructed and is still paralyzed in one leg.
Mother of two young boys, Fatima Bahmad is the deputy team leader of MAT 2, one of the nine MAG teams working in Lebanon. “I am very happy with my job with MAG. I have learnt a lot and continue to learn. As deputy team leader I have new responsibilities, it is very different from being a searcher. In MAG, men and women are equal; this is usually a man’s job. Before my family and my friends didn’t understand. They thought my job was high risk. They thought it should be a man’s job as few women do what I do. Now after working for some years they feel differently. My family are proud of me and proud of what I have achieved. As a single mother I am providing for my family. My children want me to train them. We want to do what you do, they tell me.”
Ain Majdalein is an ancient village situated high in the mountains in Jezzine district with incredible views of Lebanon’s southern coast. Over 1,000 villagers live here, and much of their most productive orchard land is contaminated by the deadly legacy of war. MAG technicians work in Ain Majdalein village to remove cluster munitions.

Ninety-year-old Emlie Maroun explains how villagers would try to clear their land: “I used to collect them in a tire, put brush wood on them and set fire to it. Then I would hide behind a big rock until they exploded!”
For centuries, the dramatic and rugged terrain around Ain Majdalein village was used to grow crops, and the steep slopes, terraced with cobble walls, will be productive once more. The teams are still working on clearance there, finding 92 Mk118 ‘Rockeye’ submunitions.

Valuable, lifesaving lessons: MAG community liaison staff provide a risk education lesson to children in Ain Majdalein village.
The Tannourine Cedar Reserve is a place famous for cedar trees, the national symbol of Lebanon, some of which are believed to be 3,000 years old. An area of the reserve had been closed off since a tour guide stepped on a mine there in April 2015. A MAG mine clearance team, funded by LMAC through BLOOM BANK, worked to clear the area.

MAG technician Mohammed Homaid carefully excavates a garden looking for cluster munitions, finding 45 M42s and one 81 mm mortar bomb so far. The area next door was cleared previously and is now a thriving vegetable garden. The land currently cleared wasn’t used before and wasn’t a high priority, but when the land owner started to build a house he discovered unexploded cluster munitions and called MAG.
Risk Education in Northern Jordan

In 2013 and 2014, the Center for International Stabilization and Recovery at James Madison University led a project funded by the U.S. Department of State’s Office of Weapons Removal and Abatement (PM/WRA) to provide explosive remnants of war risk education to Syrian refugees living in urban areas of northern Jordan. At the time, it was unclear whether the hundreds of thousands of Syrians fleeing the civil conflict and seeking refuge in neighboring countries would be able to return home in the near future, but there was still significant hope this would happen.

by Lindsay Aldrich, Suzanne Fiederlein and Jessica Rosati [ Center for International Stabilization and Recovery ]

Due to years of conflict and frequently reported use of conventional weapons by multiple actors, the humanitarian mine action community recognized that homes and communities inside Syria would most certainly be contaminated with explosive remnants of war (ERW). Returning civilians would face explosive hazards previously unknown to daily life in Syria. They would not have the necessary education and systems in place to help prevent injury and death from these hazards.

To prepare the displaced Syrians for encountering these new threats, if and when they would be able to return to Syria, CISR worked with two Jordanian organizations to conduct risk education (RE) programs in the city of Mafraq and surrounding areas. The project was designed to include multiple demographics and deliver sustainable, peer-to-peer messaging. The Hashemite Kingdom of Jordan’s national mine action authority, the National Committee for Demining and Rehabilitation (NCDR), led RE and train-the-trainer courses with groups of men and women, and a team from Life Line for Consultancy and Rehabilitation (LLCR) conducted arts-based RE workshops with children.

Train-the-trainer Risk Education

NCDR developed and led a series of five interactive workshops using a team-based coaching methodology to train 75 adult Syrian refugees (26 women and 49 men) equally representing the northern, central and southern areas of Syria. The participants learned RE safety messages and how to work in teams to effectively communicate these messages in the future among peers. The goal was to prepare civilian participants to serve as community resources of ERW safety information in order to extend the project’s reach beyond those refugees directly receiving the training by NCDR.

To recruit workshop participants, NCDR staff distributed invitations to Syrian refugees living in Al-Mafraq, and hosted informational meetings to present the program and answer questions. NCDR received more than 175 applications of interest from the target group. Using a selection process established in coordination with the Center for International Students working on the mural at Princess Alia Bint Al Hussein school. Photo courtesy of Kamel Sa’adi/LLCR.
Stabilization and Recovery (CISR), NCDR identified a pool of potential candidates from among the applicants and selected groups of 15 participants to attend one of the five, 13-day workshops offered between January and May 2014.

Each workshop utilized a coaching methodology to convey the RE messages to participants as well as to teach the trainees how to convey messages themselves and effectively present similar workshops to peers. Throughout each of the training workshops, the trainees displayed high levels of participation through discussion, group work, role-play activities and presentation-based learning.

During group learning activities, men and women worked together in teams to complete assignments, emphasizing the importance of co-ed collaboration to maximize the reach and overall effectiveness of future ERW safety activities within participants’ communities. At other times, such as during meals and breaks, participants tended to self-segregate based on gender. The flow of the workshop activities created an environment that respected individual comfort levels but encouraged workplace collaboration.

Arts-based Risk Education

LLCR is a Jordanian national nonprofit that assists survivors with physical, emotional and financial needs, while also striving to educate the public about persons with disabilities and landmine hazards through RE.1

LLCR worked closely alongside NCDR to arrange with government ministry officials, school administrators, staff and UNICEF officials the implementation of workshops in schools in the Al-Mafraq governorate. With UNICEF’s assistance, schools in Al-Mafraq have split schedules for Syrian and Jordanian children to accommodate the ongoing influx of Syrian refugee children in the Jordanian educational system.

Staff at LLCR combined their RE expertise with local arts teams recruited through the Remal Arts Center, which partnered with LLCR on the We Love Life project from 2009 to 2010. A team of artists experienced in creating murals joined LLCR to plan the workshops that combined RE sessions with art instruction focused on drawing and translating the RE messages into sketches and murals. A total of 25 RE workshops were held at three schools in Al-Mafraq governorate. The workshops...
involved Jordanian students in the morning and Syrian students in the afternoon, working together to complete murals designed by students from each school.

LLCR conducted the workshops at two schools for 200 students each and at a third school for 100 students, with LLCR arts team members returning to the schools to conduct follow-up work on the murals after each set of workshops. The messages in the artwork promoted the overall meaning behind the RE workshops with phrases such as Be Safe and We Love Life, as well as other warnings about the dangers of ERW and landmines. A total of 400 girls and 100 boys between the ages of 10 and 17 participated in LLCR’s school art workshops. The murals containing the RE messages helped share these messages among the broader population of students, teachers, administrators and families.

Practical school items, featuring artwork produced by students during the workshops, were turned into RE materials (sketchbooks, notebooks, stickers, wall calendars) and distributed to the schoolchildren shortly after the start of the 2014–2015 school year. The more than 20,000 school items distributed became a useful way to reinforce RE messages and provide children with persistent reminders based upon their own artwork, especially as the Jordanian education system requires sketchbooks and notebooks for everyday classroom use. LLCR also delivered 2015 wall calendars displaying the students’ RE artwork to local officials, school administrators, community groups and businesses to increase the scope and impact of the materials. NCDR continued to distribute materials during the school year and into the summer of 2015 as part of its ongoing RE in areas where the majority of Syrian refugees in Jordan had settled outside of the official refugee camps.

Project Continuation and Legacy

Originally, an arts-celebration event was planned at the conclusion of the workshops for schoolchildren to share information about the arts project and distribute finished materials to students and the community. However, due to the changing context in Jordan at the...
time, the project team decided instead to build on the existing We Love Life website from the previous arts-based RE program to create a web space for sharing information and images about the current project. The website (http://bit.ly/1Eet4uU) explains how the workshops were organized and conducted, and shows the artwork and RE materials the children produced. By providing photos of the arts activities, artwork created by the children and arts-based RE materials online, other schools, teachers and practitioners can continue to access these resources and gain ideas for continuing this type of safety-awareness work to help protect children and communities in Jordan and other ERW-affected places.

See endnotes page 66

The artwork was also used to design printed RE materials. Photo courtesy of Kamel Sa’adi/LLCR.

Lindsay Aldrich joined CISR in 2013 as the senior project manager/program coordinator and has helped to manage projects involving disability rights, information management, mine risk education and senior management training. She holds a Master of Public Administration in public and nonprofit management from James Madison University and was the 2012–2013 Frasure-Kruzel-Drew Memorial Fellow for Humanitarian Demining in the Office of Weapons Removal and Abatement at the U.S. Department of State. Prior to working in mine action, she managed educational and leadership programs in higher education and the private and nonprofit sectors.

Dr. Suzanne Fiederlein joined CISR in 1999, and served as senior research associate and victim-assistance team leader before becoming associate director in 2010. She has worked on projects related to victim assistance, mine risk education (managed the We Love Life ERW Awareness project in Jordan), mine action in Latin America, International Mine Action Standards and mine action casualty data systems. As coordinator of CISR’s management training, she directs the Senior Managers’ Course in ERW and Mine Action conducted at James Madison University (JMU) and in regional locations (Tajikistan and Vietnam). She received her doctorate in political science from the University of Arizona and has taught on the faculty of JMU and Virginia Commonwealth University.

Jessica Rosati joined CISR in May 2013 as a program assistant for its Senior Managers’ Course in ERW and Mine Action and is now the assistant program manager. She graduated from James Madison University (JMU) in 2014 with a Bachelor of Science in global justice and policy, and a minor in humanitarian affairs. During her time at JMU, she held the position of leader for international networking and knowledge as an orientation guide and mentor for the international student population. Prior to CISR, she worked as an intern for JMU’s Mahatma Gandhi Center for Global Nonviolence and Human Rights Watch.
Post-conflict Recovery Week
April 4-7, 2016

The Center for International Stabilization and Recovery hosts PCRW every April to raise awareness about the long-lasting effects of armed conflict, the refugee crisis and survivors’ resilience.

All events are free and open to the public.

For a complete schedule of events, see http://jmu.edu/cisr.

KEYNOTE SPEAKER

Mary Wareham, Advocacy Director of the Arms Division at Human Rights Watch and global coordinator of the Campaign to Stop Killer Robots, will present on “From Landmines to Killer Robots: Protecting Civilians by Advancing Humanitarian Disarmament.”

Reception to follow

http://commons.lib.jmu.edu/cisr-journal/vol11/iss2/1
Providing Integrated Peer-support Assistance to Landmine Survivors

Landmine Survivors Initiatives implemented a three-pronged, peer-support assistance system to meet landmine survivors’ needs in Bosnia and Herzegovina. This practice is the combination of an approach and methodology to provide integrated assistance to landmine survivors.

by Amir Mujanovic [ Landmine Survivors Initiatives ]

The mid-1990s was a period of advocating for the Anti-personnel Mine Ban Convention (APMBC), during which landmine survivors actively took part in the process along with many public figures around the world.

Peer-to-peer practice strives to make a measurable change in the lives of landmine survivors through expertly designed and integrated programs in the sectors of health, economic opportunity and social empowerment. It empowers landmine-affected individuals, families and communities to recover from trauma, claim their rights and reclaim a fully functional life.

Peer-to-peer Process

Peer-to-peer practice was originally developed in the 1990s by landmine survivors from the United States who established the global nongovernmental organization (NGO), Landmine

Velija Klepo was injured by a landmine in 1994 during a military task and later had his left leg amputated. Today, Klepo is a successful producer of fruits and vegetables.

All photos courtesy of LSI.
Survivors Network (LSN). Though this approach has been applied in several countries, it was originally launched in Bosnia and Herzegovina and implemented by Landmine Survivors Initiatives (LSI), an NGO established and run by survivors, providing assistance to other survivors. From 1998 to 2009, LSI was known as Landmine Survivors Network BiH. Development of the approach involved continual collaboration and idea exchange between the U.S.-based LSN team and the branch office in Bosnia and Herzegovina. The framework developed in the United States was then tested, implemented, refined and finalized for use in Bosnia and Herzegovina.

The guiding principle follows that every person must be in charge of determining his/her own path to recovery. Attention is paid to the person as a whole on their journey to recovery—a process in which the person transitions from phases of victim through survivor to a fully functional, integrated citizen.

Survivors’ needs are personal and different in each of these phases. This support therefore encompasses different components such as emotional and psychological support, increasing mobility, achieving economic independence, and advocating for survivors’ rights and their roles within society.

LSI’s integrated approach encompasses a dynamic, three-pronged approach to meet survivors’ needs and reclaim their lives:

- **Health.** Landmine survivors and their families are supported to recover physically and emotionally from trauma through peer support; linking to existing services; education and community support; and fulfilment of their basic needs, such as food and shelter.
- **Economic opportunity.** Landmine survivors regain self-confidence and achieve equal access to economic opportunities as a functioning member of society.
- **Social empowerment.** Landmine survivors and persons with disabilities receive the training and tools needed to claim their human rights.

As an alternative to visiting individual survivors’ homes, group support methodologies were used extensively as a cost-effective way of providing support to trauma survivors. Using a standard methodology, LSN designed and developed an
organizational structure over the course of 12 years to support services to landmine survivors in the community. Activities focused on making contact with survivors and providing services to those in need of psychological support and social reintegration.

**Peer-support Services: The Core of the Recovery Model**

Peer support is conducted by outreach workers supervised by a social worker, who is supervised directly by the executive director. The economic opportunity coordinator assists survivors in obtaining vocational training and employment, and in developing income-generating projects, whereas the advocacy coordinator increases landmine survivors’ capacity in disability rights and advocacy through training at different levels.

Outreach workers are landmine survivors who received training in peer support. They are skilled in establishing a relationship of trust and providing the emotional support, motivation and practical information necessary for survivors to make and implement their own decisions. Their training and shared experiences with their peers prepares them to discuss the mental and behavioral consequences of psychological trauma, and how best to cope with these changes. They also receive training on how to recognize life-threatening health conditions and seek medical attention on behalf of survivors when needed. Outreach workers can determine survivors’ health goals, assess their current and desired employment situations, determine which assistive devices they’d like to use, and help envision the ways in which they would like to participate in the community. During peer-support visits, outreach workers help survivors facilitate their social interaction with family members, friends and society at large.

When survivors require referrals to specialized services—such as medical care, mental health support, assistance with meeting basic human needs or enrolling in welfare assistance/insurance programs—outreach workers may refer or direct survivors to the appropriate service provider. Helping survivors connect to specialized services allows outreach workers to influence system-level changes and obtain services, grants and jobs for survivors that LSI could not provide.

In cases where survivors are unable to pay for services and other sources of support are not available, ensuring an emergency fund is important to provide direct assistance in the
form of goods (e.g., prostheses, food, tools, raw materials, livestock) or services (e.g., training, education) to help survivors meet their urgent health-related needs or to help their families move toward economic independence. An organization’s ability to provide direct and concrete assistance where necessary reinforces the confidence between outreach workers and landmine survivors, where the survivor sees a benefit to their involvement in the program.

Special attention is given to building landmine survivors’ capacity on disability rights and increasing their advocacy skills through local, national and regional cross-disability trainings as well as through participation in national and international campaigns, or global coalitions. LSI as well as LSI-established coalitions, organized and ran several national campaigns that culminated with ratification of the U.N. Convention on the Rights of Persons with Disabilities by the state authorities in Bosnia and Herzegovina.

LSI actively encourages all survivors to participate in community service for the benefit of other survivors and their communities. This contributes to survivors’ recovery by providing an opportunity to demonstrate leadership and engage the community. Survivors giving back to communities enables LSI to sustain and multiply the effects of its program.

**Key Successes and Project Impacts**

The model is designed to work at creating change at three levels: individual, organizational, and local and national level systems. Work at the individual level refers to survivors and their families. Work at the organizational level includes organizations of survivors and amputees, disability organizations, and employers and service providers. System-level engagement assumes work with competent authorities, ministries and institutions at all different levels in Bosnia and Herzegovina.

Significant success has been observed at the individual level, as an increasing number of survivors improved their health-related quality of life, sense of physical and social functioning, and emotional well-being. Moreover, they increased their employability, diversified their job skills, and improved their knowledge of rights and advanced advocacy skills.

**Contributing Factors**

The approach is highly effective but demanding on resources, time and energy. To make this practice possible, a number of elements must be in place:

- **Collaboration between different stakeholders**, including those from the government, public sector, business, NGO sector and media
- **Training and capacity-building** of staff, especially outreach workers who are survivors and crucial in empowering other survivors in their recovery and reintegration through peer-to-peer counseling
- **Travel fees** of outreach workers who use their own vehicles to visit survivors in homes and hospitals
- **Human resources costs**, as teams consist of program specialists (e.g., social workers and economic and advocacy coordinators)
- **Monitoring and evaluation tools** that are well developed and in place to ensure changes are documented and implemented
- **Tailored support to individuals** and using resources (time, money, people) appropriately requires first determining which survivors need high levels of support and which need lower levels of support; some survivors may have their own personal networks or support to mobilize. This will ensure support tailored for every individual.

**Challenges**

- **Though peer support is integrated into several key national strategies and policies** (i.e., the respective disability strategies for Republika Srpska and the Federation of Bosnia and Herzegovina and the Victim Assistance Sub-Strategy), integration of peer support in the system level remains the biggest challenge for the future.
- **Most survivors live in rural areas**, and outreach workers travel many hours to bring service and support directly to survivors. Thus, adequate and well-organized financial and logistical support is necessary to ensure that outreach workers reach the homes of landmine survivors.

Utilizing locally available services and opportunities is of the utmost importance. To make this happen on an equal basis with other potential users, survivors must be equipped with knowledge, skills, confidence and information, so that they can build and develop their own networks of support after graduating from a program.
Vujadin Tomic, a 61-year-old man with a foot amputation, states, “Peer support means a lot to me, and speaking to someone who is similar to me makes me relaxed. I can tell him [LSI outreach worker] everything, since I know he will help me overcome the crisis.”

Jasmina Jahic, a 37-year-old landmine survivor, affirms that peer support “helped me in the most delicate period of my life—to recover, to have a family and to start my own business.”

Aleksandar Cvijanović, 17, with a below-knee amputation, says, “After losing my leg, I did not have the chance to talk with someone who does not have legs like me. I did not believe to walk again or to continue with my education. Today, thanks to the help, I regularly go to high school, I am successful in sitting volleyball and I met lots of friends from various towns and cities.”
• Obtaining services from other agencies and institutions is a continual challenge due to the complex needs of landmine survivors versus the lack of funding and opportunities typical of many service providers.

**Lessons Learned**

• Based on 17 years of experience, peer support has proved an effective way of assisting survivors with recovery and is strongly linked to mental health and economic success, which is particularly the case in environments lacking quality service providers, especially in the domain of psychological well-being.

• Peer support is most effective if provided immediately after trauma; peer support is best provided by first determining the personal needs of survivors.

• Community services performed by survivors are seen as an effective empowerment tool for achieving recovery objectives through an improved sense of inner self and social identity.

Advocacy also plays an important role throughout the peer-support process; during preparation, to call for support and participation of all parties involved (individuals, NGOs and governments); during implementation, to report on progress to increase transparency; and after implementation, to report on achievements and share lessons learned and recommendations.

This practice fully recognizes that victim assistance is a human rights issue and works toward integrating rights-based victim assistance in relevant laws and policies. By including, closely consulting, and building capacity of victims and their representative organizations to advocate for the review of existing legislation, it ensures that victim assistance best addresses survivors’ long-term needs.

**Multi-stakeholder Discussion**

After years of monitoring, evaluating, revising and improving the peer-to-peer practice in Bosnia and Herzegovina, a multistakeholder discussion was organized in late 2010 to propose ideas about how peer support could be replicated or scaled-up in other parts of the country not yet covered.

A regional training and presentation on peer-to-peer support gathered local amputee associations from Bosnia and Herzegovina (Banja Luka, Bijeljina, Bužim, Istočno Sarajevo, Trebinje and Velika Kladuša) and Zagreb, Croatia. These associations recognized the advantages of peer support, replicated the practice and worked in partnership with LSI. Some organizations received grants from LSI in order to apply a three-pronged approach covering health, economic opportunities and social empowerment.

**Key Recommendations**

• An integrated, three-pronged (health, economic and social) approach is the most effective way to address survivors’ needs and should be interpreted broadly as a rights-based, crosssectional and survivor-centered program with impacts at three levels: individual (landmine survivor), organizational (landmine survivors’ associations and disabled people’s organizations) and system (institutions and governmental entities).

• A broader definition of a landmine victim/survivor and the needs of the family of those killed or injured is essential when planning and developing landmine victim-assistance programs.

• Peer and conventional psycho-social support offered by professionals (psychologists, psychotherapists, social workers, etc.) should work hand-in-hand to ensure survivors experience the most effective support and recovery process.

*See endnotes page 66*

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For more information, please see: http://bit.ly/1MZsd17.

Amir Mujanovic has been with Landmine Survivors Initiatives (LSI) since 2007 and served as executive director since 2008, managing teams of up to 24 members. Prior to LSI, he spent 12 years working with the Office of the U.N. High Commissioner for Refugees in humanitarian assistance and human rights issues during the conflict and post-conflict periods in Bosnia and Herzegovina.

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feature | the journal of ERW and mine action | December 2015 | 19.3
Solutions for Increasing Physical Accessibility, Capacity Building and Psychological Support in Tajikistan

In order to fulfill requirements of the U.N. Convention on the Rights of Persons with Disabilities (CRPD), the city of Dushanbe, Tajikistan, modified the architecture of three public buildings and implemented a new psychological training process for medical centers in the area to provide awareness about disability rights and increase provision of psychological aid. The desired end goal is that advocacy will allow for increased public acceptance and understanding of disability while moving Tajikistan toward signing the CRPD.

by Reykhan Muminova, M.D., Ph.D. [ UNDP Support to Tajikistan Mine Action Programme ]

Following independence in 1991, Tajikistan’s civil war (1992–1997) destroyed much of the country’s infrastructure and displaced a large percentage of the population. Leftover ordnance and landmines from the conflict still inflict injuries, and thousands of survivors have yet to fully recover from the physical and psychological trauma related to the war.

The total number of registered persons with disabilities in Tajikistan is more than 147,327 according to information provided by Tajikistan’s Ministry of Health and Social Protection of the Population (MHSPP) in January 2015. Landmines/unexploded ordnance have injured or killed more than 850 persons since 1992 according to the Tajikistan National Mine Action Centre (TNMAC).
Article 25 of the Tajikistan’s Law on Social Protection of People with Disabilities ensures disabled people the right to unimpeded access to social infrastructure and transportation. Providing an accessible environment is one of the fundamental requirements of the Convention on the Rights of Persons with Disabilities (CRPD) which “[recognizes] the importance of accessibility to the physical … environment in enabling persons with disabilities to fully enjoy all human rights and fundamental freedoms.” The CRPD also discusses accessibility in many of its articles, starting with the Preamble, but Article 9 is fully devoted to accessibility issues.4

Since 2012, the Office of Weapons Removal and Abatement in the U.S. Department of State’s Bureau of Political-Military Affairs (PM/WRA) has supported the Tajikistan victim-assistance program to provide solutions and funding for physical accessibility issues and to build capacity for doctors and nurses in mine-affected areas, increasing psychological support to landmine survivors and persons with disabilities.

A two-phased project provided for training on psycho-social assistance and accessibility solutions for those with disabilities. The Swiss Foundation for Mine Action (FSD) implemented the first phase in 2012, introducing solutions for accessibility issues, while the United Nations Development Programme: Support for Tajikistan Mine Action Program (UNDP STMAP) completed the second phase – “reconstruction” in 2015. The Disability Support Technical Working Group (TWG) considered different locations and decided as a group what public buildings would benefit most from being made accessible. The group took into account project nominations by government ministries, criteria for reconstruction, technical results from assessment trips and experts’ recommendations. Following this, TWG made the final decision to improve accessibility at the following sites in Dushanbe: the State Medical Labor Expertise Service in the National Medical Center; the Dushanbe Circus; and the Research Institute for Expertise and Rehabilitation of Persons with Disabilities.

Renovation Sites

The victim assistance component of STMAP developed criteria to prioritize sites based on the estimated number of persons with disabilities accessing the site (including landmine and explosive-remnants-of-war survivors), popularity of the site, and future use of adapted sites for accessibility and CRPD-advocacy campaigns. During the first stage of this project, two sites were fully rehabilitated and made accessible: Dushanbe Central Mosque (Mosque Haji Yaqob) and the Children’s Outpatient Clinic 12. Renovations to the sites included making public restrooms and entrances accessible, installing ramps, widening elevator doors, and labeling signs in Braille.

In 2013, UNDP/STMAP and TNMAC received an additional request from MHSP to provide support and rehabilitation to two hospitals for those with disabilities: a newly opened outpatient clinic (State Medical Labor Expertise Service) situated in the National Medical Center required a lift; and the Research Institute for Expertise and Rehabilitation of Persons with Disabilities required accessibility ramps. UNDP STMAP further developed these requests and submitted it to PM/WRA for funding.
Chairman of the Society of Persons with Disabilities, Imkoniyat Asadullo Zikrikhudoev, mentioned that when the outpatient clinic was first opened nine months prior, his greatest concern was that “the center for persons with disabilities was situated on the second floor.”

During monitoring, Qurbonaliev Azim, director of outpatient clinic, expressed his gratitude to the donors, mentioning, “Every day up to 20 persons with disabilities are visiting as outpatients. Before construction of the lift, their relatives and accompanying persons helped them to reach the second floor. The outpatient clinics provide different consultation and treatment services (therapy, neurology, gynecology, cardiology, ultrasound examination, electrocardiogram and the most advanced equipment for ear, nose and throat specialists in Tajikistan, etc.). All services and consultation are free for persons with disabilities.”

Muazzama Mirzoeva, a therapist with 45 years of experience, said that “it was an extremely important project and very good that we now have [an] elevator. From the opening day last year, it was the most challenging issue for patients with low mobility, especially wheelchair users and polio patients, because it is very difficult to carry patients to the second floor.”

Project Assessment

Before and after site renovations, staff from the Research Institute of Architecture and Construction conducted Knowledge, Attitude and Practices (KAP) surveys on each site to determine the projects’ outcomes. The group will conduct a follow-up KAP survey at a later date to assess the impact on those

within the local community. These projects will serve as examples of effective accessibility renovations and will hopefully influence societal attitudes about disability and behavior toward those with disabilities, bringing Tajikistan one step closer to CRPD accession.

Psychosocial Support

In addition to permanent physical disabilities, survivors often show symptoms of chronic post-traumatic stress disorder and experience reduced emotional well-being including depression, anxiety, fear, anger, dependence on others, and isolation due to feelings of shame and discrimination. In addition to needing medical care and prosthetic devices, survivors often need psychological rehabilitation, which should be provided from the moment of injury.

Central district hospitals in Tajikistan are usually the first medical facilities where survivors and other people with traumatic injuries receive first aid, but like in many other post-conflict countries, the rural hospitals and clinics have no specialists in psychological support available to properly treat landmine survivors or others with disabilities in need. Therefore in 2012, UNDP STMAP requested a grant from PM/WRA to build the capacities of local doctors and nurses in mine-affected areas for provision of psychological support to landmine survivors and persons with disabilities. PM/WRA provided the financial support to the Information Management Land Release and Victim Assistance pillars of UNDP STMAP, and further, based on the UNDP tender results, part of funds were passed to the public organization, Psychological Support Center for implementation of the psychological capacity-building project.

Between 2012 and 2014, the Psychological Support Center, which has experience in organizing psychosocial support activities in emergency situations and collaborates with MHSPP and TMAP, focused on the psychosocial care component of victim assistance. The Psychological Support Center worked to cultivate the capabilities of local doctors and nurses in mine-affected areas for the provision of psychological support to landmine survivors and persons with disabilities.

Training guidelines were developed and published in cooperation with Global Initiatives in Psychiatry and the Tajik National University’s Department of Psychology before implementing the project. Training focused on adapting
psychosocial support for persons with disabilities for medical and department of social protection staff from mine-affected districts. The training enables participants to assess the psychological status of persons with newly acquired disabilities, including landmine survivors. Changing societal attitudes, raising awareness and offering trainings for architects of public buildings provides the public with opportunities to learn more about those with disabilities in their community.

More than 200 doctors and nurses from trauma, surgery and anesthesiology departments received training. Additionally, staff from the department of social protection from mine-affected districts received training on providing support to patients with traumatic amputation of limbs (including landmine survivors). These trainings taught medical staff and social workers about psychological aid and psychosocial rehabilitation for persons with disabilities.

In 2013, the Psychological Support Center trained and certified 84 medical staff from nine landmine-affected districts on specialized psychosocial support for those with disabilities. In 2014, the project continued to train more doctors and nurses from mine-affected districts: Five four-day training sessions were organized in central locations of Darvoz, Khujand, Kulyab and Rasht regional hospitals, as well as the Dushanbe central hospital in August and September 2014.

A team from the Psychology Support Center conducted Capacity, Attitude and Behavior surveys twice daily to understand participants’ satisfaction levels. Results from the first training conducted in 2013 indicate that the majority of health workers, especially nurses in trauma care, need training on the use of psychological techniques to work with newly injured people. Therefore, the target group in 2014 consisted of mostly nurses (83 out of 132 participants; 64 females/68 males) from mine-affected regions. Participants reported that they enjoyed the various hands-on activities organized by the psychologists that broke up the intense course work. Alternating group work with theoretical discussion also proved useful. Participants agreed that psychological and psychosocial support is one of the key elements of victim assistance and comprehensive rehabilitation. Therefore, it was determined that health and social workers need greater training in psychology, including theoretical and practical aspects of the field, to better assist landmine survivors and others with disabilities. Other feedback received from participants included the need to train people working in other fields, such as teachers and police. Participants also spoke of the need to create psychological units in hospitals for medical staff, patients and their relatives, as well as the need to create a countrywide telephone hotline.

Following training, participants implemented the skills learned, applied them in their jobs and reported back. The Psychology Support Center staff and the participants prepared the results in a short report, including a description of the psychological trauma causes, psychological state and the support technician. Each training participant consulted two to three patients within one month after completion of training. More difficult cases were discussed with psychologists via phone consultations.

Continuation of Projects

Within the first month of completing the psychosocial training for health workers, 302 persons who underwent amputations, persons with disabilities and patients who were in need of psychological support underwent rehabilitation with the techniques taught in the trainings. Hospital staff reported significant improvements in the mental health and psychological well-being of these patients. Furthermore, the remodeled buildings not only serve those with disabilities, but also women with children in strollers and the elderly. With implementation of these projects, the hope is that public acceptance and understanding of disability will continue to grow, a greater number of patients will receive the assistance they desperately need and Tajikistan will sign the U.N. CRPD by the end of 2015. See endnotes page 66
Caught in the Crossfire: Challenges to Providing Victim Assistance in Colombia

Due to ongoing civil conflict, many Colombian civilians experience both financial and physical harm, but those living in rural areas have limited or no access to much-needed medical and economic assistance. In conjunction with governmental and nongovernmental organizations, as well as multinational corporations, the Polus Center for Social and Economic Development assesses the needs of and provides rehabilitative services to residents in these remote areas.

by Michelle Miller [Polus Center for Social and Economic Development]

The most prominent non-state armed group involved in the conflict is the Revolutionary Armed Forces of Colombia (FARC). Notoriously violent, FARC uses landmines and improvised explosive devices (IEDs), as well as kidnapping and extortion, to gain control over territory and followers. According to the Landmine and Cluster Munition Monitor, FARC is the most prolific user of anti-personnel (AP) landmines in the world, complicating the government’s attempts to demine the country in accordance with the Anti-personnel Mine Ban Convention (APMBC). Although many civilians in Colombia are intimidated by FARC, some impoverished Colombians living in rural areas are drawn to its Marxist ideology that provides some semblance of hope toward lifting themselves out of poverty.

In addition to FARC, the National Liberation Army (ELN) fights to protect what it perceives to be its territory, often using AP mines and IEDs to meet their objectives. Paramilitary groups are prevalent in the country as well, and though the Monitor reports no evidence that they have used landmines since 2006, these groups do pose a threat to civilians. Paramilitaries may misidentify individuals as a member of one of the other illegal armed groups and civilians may inadvertently get caught in battles between the paramilitaries, FARC or ELN.
Consequences of Conflict

The ongoing violence has left many survivors in its wake. In 2009, the government passed legislation to assist these victims. Colombia’s Victims and Land Restitution Law, commonly referred to as the Victims Law, was designed to provide compensation to over 3.7 million Colombians who have been displaced from their homes and farms, giving them rights to land and financial compensation as reparations. However, these services often do not reach a large portion of the Colombian population living outside of the country’s major cities. This is one of many challenges to providing victim assistance (VA) in Colombia. Thirty percent of the population lives in poverty and close to 12 million people live in the rural countryside. Most of the rural areas now have electricity, according to the Colombian Coffee Growers Federation (FNC), but life is still difficult. Access to services is limited, cutting many people off from medical assistance and police protection. Rural areas are challenging not only because of physical distance from cities, but also because of security concerns posed by armed groups. A journey to the city for medical care could easily be compromised by a guerrilla attack. State actors and nongovernmental organizations (NGO) trying to bring services to the rural areas are also at risk.

Addressing Victims’ Needs

The Polus Center for Social and Economic Development (Polus Center) is a U.S.-based NGO that has worked since 2005 to mitigate the effects of violence by providing rehabilitation services to people living in remote areas of Colombia. The Polus Center has partnered with the Office of Weapons Removal and Abatement in the U.S. Department of State’s Bureau of Political-Military Affairs (PM/WRA), FNC and the Centro Integral de Rehabilitacion de Colombia (CIREC). FNC is a Colombian nonprofit that supports the well-being of Colombian coffee growers and has an extensive network throughout the country. CIREC is a Colombian nonprofit organization that provides mobility aids to landmine survivors and victims of conflict. The Polus Center’s Coffeelands Trust project is a public-private partnership with PM/WRA and coffee companies such as Keurig Green Mountain that provides assistance to coffee farmers who are landmine survivors or victims of conflict.

In August 2014, the Polus Center formed a delegation with its partners and local landmine survivors to visit Samana, a rural community in the Caldas department, which has a population of approximately 25,000. The delegation witnessed firsthand some of the ongoing difficulties for victims of the conflict, the majority of whom live outside of the urban areas. Of those living in the Caldas department, approximately 18,000 live in Samana proper while others live one to five hours away by car. The entire community was uprooted and displaced by the rebels when FARC occupied Samana, its fighters forcing people to evacuate their homes within 24 hours. With no place to go they were driven from their farms, which were their livelihoods. Samana is six hours by car to Manizales or Bogotá and is an arduous drive on difficult roads through the mountains, though most residents of Samana do not have automobiles.

The delegation interviewed 22 survivors, selected as representatives of the community by FNC. Survivors identified four core needs that FNC affirmed were consistent throughout most of the population: healthcare, education, higher income and housing. In Samana, as in many rural areas, access to medical services is limited or inaccessible. Because people cannot access healthcare, conditions that might otherwise be treatable become crippling and in some cases even fatal. Many people who are landmine/IED survivors and those with healthcare needs have limited mobility. Combined with poverty and distance from the cities, this has created a situation in which many people are in need of urgent medical care.

Furthermore, educational levels are extremely low, schools are vastly ill-equipped and the majority of the population does not attend school past the primary level. Housing is inadequate; several of those interviewed had constant flooding because of leaking rooftops. Many had consistent health issues due to the lack of proper sanitation facilities. These issues are augmented by ongoing fears of violence. The roads in and out of the town are dangerous, especially after nightfall, making it difficult for services to reach people.
The internal partners at FNC and CIREC have significant knowledge of the rural communities of Colombia, and have confirmed that the situation in Samana is similar to that of many people living outside of major cities. The Colombian government rid Samana of the rebels but other rural areas are still heavily affected by continuing violence. So removed from the cities, it is not surprising that many people in rural areas are still unaware of the rights to which they are entitled according to the Victims Law. Many of those who are familiar with the law have difficulty registering with the government to receive their benefits. Most landmine/IED survivors live in rural areas, so the most vulnerable victims of the conflict are the most removed from services. However, by the end of the delegation trip to Samana, the Polus Center was able to reach people living in a very remote area, providing access to much-needed services and information.

The principal impediment to reaching people living in rural areas is security, due to the continuing threat of violence. The Polus Center managed this situation by working through agronomists and outreach workers employed by FNC. These specialists are invested in and have a unique knowledge of the rural areas, enabling them to navigate the areas with minimal risk. They are also experts in coffee production; coffee is the principal crop in Colombia and the experts’ visits are welcomed.

The Polus Center trained outreach workers to interview victims in a manner that effectively identifies, assesses and prioritizes their needs. Many survivors would rather have meaningful work than a prosthetic or a roof over their house, but this may not be immediately obvious. Each survivor needs a unique set of supports that can only be determined through a careful and coherent method of interviewing. In addition to providing this training, the Polus Center has employed survivors themselves to work with their neighbors to design and implement individualized programs. Over the next two years, the 22 people interviewed in Samana in August 2014 will receive support in accordance with the needs they identified as the most pressing during the interviews. Eighteen people will receive new or improved houses, seven will receive specialized health care access, and 22 will receive economic support to increase and/or diversify their sources of income. Additionally, 84 mobility aids will be distributed in Samana and surrounding towns. Follow-up interviews will be conducted with

Elkin Giraldo is a young man from Samana, Colombia, whose story encapsulates several of the ongoing challenges to providing victim assistance in Colombia. Giraldo stepped on a landmine shortly before the rebels invaded his town; he was one of many people impacted by landmines planted by FARC combatants. He lost the lower part of his right leg in the explosion. Giraldo is 26 today, but he was only 21 when the FARC invaded his town. The rebels appeared on Giraldo’s doorstep and gave him less than a day to abandon his home and farm. Though he had nowhere to go, he was newly married and had a one-year-old son and felt he had no option but to pack what he could carry and flee. On the road the family was soon caught between competing forces, and Giraldo had an impossible choice. He could fight for one of the rebel groups, abandoning his family and risking his life, or he could attempt to flee and become an enemy of both. Eventually Giraldo was permitted to continue on with his family without joining the army, though they had nowhere to go and remained on the run until the FARC left Samana two years later. Giraldo has since worked to rebuild his farm and his house to provide for his young son and wife.

Elkin Giraldo plays an integral role in the work in Samana, helping to gather information from and provide services to his neighbors.

Photo courtesy of Michael Lundquist.
Michelle Miller is a program manager at the Polus Center for Social and Economic Development, a nonprofit organization that administers a wide range of programs including victim assistance and support for people with disabilities in the United States and throughout the world. She holds a Master of Arts from Clark University’s (U.S.) International Development and Social Change program, with a concentration in the prevention of human trafficking.

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A Path Forward

The solution to the disconnect between services and victims lies in public-private partnership that actively engages the victims. This arrangement benefits everyone involved and offers a unique opportunity for survivors to receive empowering training and employment. The Polus Center has a successful history of working with public-private partnerships and utilizing a holistic approach to provide services to victims. There continue to be challenges to providing VA in Colombia, but participatory partnerships such as the Coffeelands Trust’s collaboration with internal organizations such as FNC and CIREC, and U.S.-based entities such as Keurig Green Mountain, PM/WRA and the Polus Center will pave the way forward. Combining the knowledge and expertise of Colombian nonprofits dedicated to the wellbeing of victims of conflict and other vulnerable people with the resources of international NGOs and the support of the private sector promises to bridge the gap between the government and the citizens who most need its support.

See endnotes page 66
Evolution of Disability Rights in Iraq

Due to the many years of conflict in Iraq, landmines and explosive remnants of war resulted in a large population of persons with disabilities. People with disabilities in Iraq lack adequate housing, medical care, educational opportunities and legislation protecting their rights. Now is the time to create the legal framework protecting the rights of persons with disabilities.

by Ken Rutherford and Megan Hinton | Center for International Stabilization and Recovery |

Iraq hosts some of the highest rates of persons with disabilities (PWDs), explosive remnants of war (ERW) and landmine contamination in the world. According to the World Health Organization (WHO), about two million disabled people live in Iraq. In contrast to the pre-Saddam Hussein government that lacked a human-rights agenda and legal protective framework for the disabled, the Iraq government’s recent political attention to disability rights has been positive, as evidenced by its accession to the Convention on the Rights of People with Disabilities (CRPD), Anti-Personnel Mine Ban Treaty (APMBC) and the Convention on Cluster Munitions (CCM).

Landmine and ERW contamination is the result of recurring internal conflicts, the Iran-Iraq War (1980–1988), the Gulf War (1991), the invasion by the U.S.-led coalition in 2003 and the increased violent activity by insurgent groups that followed. Accurate and comprehensive estimates of the overall degree of contamination in the country cannot yet be determined until Iraq’s survey and data collection capacity is improved. According to iMMAP, which provides information management support to the Government of Iraq in order to quantify its amount of mine contamination, mines contaminate a total of 1,295,621,650 sq m in the central and southern provinces. The Basra province alone possesses a total of 1,171,166,897 sq m of contaminated land, accounting for more than 90 percent of the total contamination in central and southern Iraq. The remaining contamination in central and southern Iraq is located in the Diyala, Missan, Muthanna, Nineawa and Wassit provinces.

Iraq also possesses a significant amount of cluster-munition contamination as a result of air strikes from the 1991 Gulf War and 2003 invasion of Iraq. Cluster-munition contamination in the central and southern provinces totals 208,251,879 sq m, of which most is concentrated in the Muthanna and Thi-Qar provinces. Contamination in the central and southern provinces by other types of ERW amounts to 483,394,792 sq m. As a result of ongoing violent conflict in Iraq, iMMAP has noted a large change in the amount of suspected hazardous areas. iMMAP records 992,175,808 sq m of new battle area in the Babylon, Diyala and Salah al-Din provinces in 2015, raising the total amount of battle area in central and southern Iraq to 1,055,623,230 sq m.

According to iMMAP, there is a total of 128,929,311 sq m of confirmed hazardous area and 168,885,007 sq m of suspected hazardous areas in the Kurdistan region. The number of landmine/ERW casualties in the Kurdistan region totals...
In 2014, I traveled to Kurdistan to gather information on needed mine risk education (MRE) and disability awareness programs and observed firsthand the effects of conflict and landmines/explosive remnants of war (ERW) on Kurdistan’s unique situation. The actual number of victims of landmines/ERW in Iraq is unknown, but Iraqi national databases show 21,492 causalities between 2001 and 2007, with more than half of these taking place in Kurdistan. The danger of landmines/ERW in Iraq and Kurdistan will only increase with the recent influx of Syrian refugees, now at 248,203 people, and the rising number of internally displaced persons, who now total 2.96 million people in Iraq. I observed refugee camps at Arbat and Gawilian, met with members of NGOs working in the area, and observed an MRE session at a private school. The important partnership between NGOs and governments was apparent from the start as I saw firsthand the positive benefits of collaboration in the camps and the incredible work being done in Kurdistan with MRE and victim assistance.

~ KEN RUTHERFORD

13,000 (2,356 injured/10,644 killed). The majority of these casualties occurred in the Slemani and Erbil provinces.

Although much of the ERW contamination in the Kurdistan region occurred decades ago during the intrastate conflict between Kurdistan and the Iraqi government, it remains a serious current threat—especially now that the region has experienced a large influx of Syrian refugees and internally displaced persons (IDPs) from elsewhere in Iraq who are unfamiliar with the area and the danger beneath its terrain.

Disability in Iraq

Al-Qaida in Iraq has been active since 2004, and the Islamic State group is currently in conflict with government forces and its allied militias. Some reports indicate that the Islamic State group is laying mines as well as improvised explosive devices in Iraq, including Kurdistan. According to WHO, the total number of IDPs in Iraq rose to 2.96 million by June 2015. Additionally, it documented 248,203 Syrian refugees residing in Iraq at that time. The growing number of IDPs and influx of refugees place unbalanced stress on the health care infrastructure.

The current conflict in Iraq greatly impacts the lives of PWDs. Those who lost limbs or faculties—from war or other causes—experience extreme hardships. PWDs in Iraq face extensive discrimination in an environment and lack legislation protecting their rights to live as functioning, contributing citizens, including services and facilities capable of meeting even basic medical or rehabilitative needs. For the Iraqi people, disabilities usually result in job loss, an inability to attend school and impoverishment for their entire families. These hardships are not just because of physical barriers. Profound social barriers exist as well. These problems are compounded during conflict, making those with disabilities much more vulnerable, especially due to lack of awareness about their rights and limited mobility. Many of those with disabilities are abandoned during evacuation, due to missing or inadequate preparation and planning exacerbated by inaccessible services such as transportation systems.

Those who succeed in fleeing the initial threats of violent conflict still face additional obstacles. Conflict often disrupts physical, social and economic structures serving as societal support systems; and PWDs experience the effects of this disruption much more than the general population. Most shelters and refugee camps are inaccessible to those with mobility issues. Due to scarcity of resources in these facilities and the perception that anyone with a disability requires extraordinary medical care and attention, they often experience blatant discrimination or are turned away from facilities entirely. Refusal of services to PWDs, such as that observed in the refugee camps, blatantly violates the CRPD, as Article 11 clearly declares that States Parties are obligated to take “all necessary measures to ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict.”

Disability Legislation

On 20 March 2013, Iraq ratified the CRPD that asserts the inherent rights of PWDs. Personal mobility and accessibility—in terms of intellectual access to information and communication as well as physical access to goods, services and facilities—are two of the most emphasized issues in the CRPD.
Photos from a peer-support planning trip in Erbil and Dohuk, Iraq (January 2012).
According to the 2005 Iraqi constitution, “The State shall care for the handicapped and those with special needs, and shall ensure their rehabilitation in order to reintegrate them into society and this shall be regulated by the law.” However, many years passed before Iraq made any legal commitments to pursuing disability rights. In September 2013, the Iraqi Parliament passed a national disability law titled, Law for the Care of Persons with Disabilities and Special Needs. However, because this law was originally drafted prior to Iraq’s accession to the CRPD, it does not fully implement the recommended measures outlined by the CRPD. Of particular concern is that the law’s language posits disabled people as recipients of care, which is evident in the law’s title, rather than emphasizing disability rights and the right for all PWDs to serve as active, contributing members of society.

Because Kurdistan is officially a region of Iraq, it must also comply with the protocols specified in the CRPD. Article 25 of the 2009 Draft Constitution of the Kurdistan Region states that the Kurdistan government must ensure the welfare of those with disabilities and aid their reintegration into society. Similarly, the Kurdistan Parliament passed a regional law to supplement the CRPD in 2011, titled Law no. 22 on the Rights and Privileges of Persons with Disabilities and Those with Special Needs in the Kurdistan Region. However, many PWDs living in Kurdistan feel this law does not sufficiently implement the recommended CRPD protocols, and are pressuring the Kurdish Regional Government to amend the legislation to include more protective measures such as increased pensions for PWDs and their caretakers, additional welfare aid for health insurance and housing, as well as loans enabling PWDs to marry.

### Services Available

The health care infrastructure in Iraq still lacks the human capital and resources capacity to effectively respond to weapons-related injuries, including medical procedures such as amputations or shrapnel removal. In 2013, the International Committee of the Red Cross (ICRC) conducted trainings and provided resources to hospitals in conflict-prone areas in order to expand its trauma care capacity. Specialized treatment such as reconstructive surgery is much less accessible to mine/ERW survivors due to the fact that the specialized services are often available only through private clinics and are very expensive. Weakening security in the country in the past year threatens the ability of governmental bodies and humanitarian nongovernmental organizations to access and assist mine/ERW survivors and other PWDs in need of services.

As of November 2014, ICRC was supplying 66 health care facilities across 10 cities with medicine, medical instruments and equipment in Basrah, Dohuk, Erbil, Fallujah, Hamdaniyah, Hawijah, Mosul, Najaf, Sinjar and Tooz. ICRC also operates a physical rehabilitation center in Erbil and supports eight other rehabilitation centers throughout the country. Together, these rehabilitation centers serve more than 23,000 PWDs. As of 2013, the situation for mine/ERW survivors living in Kurdistan was relatively better than that for...
survivors living in central and southern Iraq. Yet, the health care infrastructure still lacks the capacity to comprehensively address the needs of mine/ERW survivors in the Kurdistan region.

Since 2012, the Kurdistan region has experienced an influx of Syrian refugees and IDPs from central and southern Iraq, many of whom have disabilities and need specialized medical care. In response to these growing pressures, Handicap International has expanded its operations staff based in the Kurdistan region. The organization offers PWDs prosthetic devices and mobility aids, as well as rehabilitative services.

Recommendations for the Future

According to the 2014 Landmine and Cluster Munition Monitor, victim assistance programming in Iraq has been ad hoc at best which is somewhat understandable in light of recent political turmoil. The Monitor recommends three action points based on years of victim assistance research: sustainable survivor data-collection mechanisms, increased survivor participation in disability rights issues, and gender-equal survivor assistance and empowerment programming. These action points are especially appropriate and important as Iraq is party to the three key international legal conventions related to survivors of mine/ERW incidents: the APMBC, CCM and CRPD. Now is the time to institute and implement transformative disability rights legislation in order to assist and protect those with disabilities during the current period of conflict and in the post-conflict reconstruction period to follow.

See endnotes page 66
Humanitarian Mine Action in Afghanistan: A History

After a decade of Soviet occupation in Afghanistan and the resulting internal conflict, the removal of explosive remnants of war (ERW) became a complicated issue. Systematic clearance of ERW was difficult to establish due to the volatile security situation and an inability to regulate clearance work. However, due to collaboration between the United Nations and Afghan nongovernmental organizations, mine clearance operations were successfully established in Afghanistan in the 1990s.

by Ian Mansfield

The humanitarian mine action sector, as we understand it today, originated in Afghanistan in late 1988. Prior to that time, many assumed that the military would be responsible for clearing explosive remnants of war (ERW), as was necessary in Europe after World War II. However, when the Soviet army withdrew from Afghanistan in February 1989 after a ten-year occupation, it was suspected that millions of anti-personnel landmines remained. The Soviet army was not going to clear them, and no recognized government or army existed in Afghanistan to deal with the problem. With over five million Afghan refugees living in Pakistan and another three million in Iran, the U.N. saw that a humanitarian catastrophe would unfold if these refugees suddenly decided to return home to their mine-contaminated villages.
Role of the United Nations

In 1988, the U.N. launched a general humanitarian relief program, Operation Salam, to assist Afghanistan. The United Nations Office for the Coordination for Humanitarian Assistance in Afghanistan (UNOCHA) initiated an appeal in October 1988 for funds to help train Afghans to clear the landmines. A village demining concept was considered the best option. The U.N. would train Afghan refugees in basic mine clearance skills and when they returned home they would clear their village of landmines. The response to the appeal was poor, and only Japan and the United States made pledges of money. The vast majority of countries still regarded landmines as a military problem rather than a humanitarian one.

A plan was devised whereby a number of predominately Western countries would provide military experts to UNOCHA to train Afghan civilians. This group included Australia, Canada, New Zealand, Norway, Turkey, the United Kingdom and the United States. After a two-week training course was developed, thousands of Afghans from the refugee camps in Peshawar and Quetta were trained in basic mine clearance skills from 1989 to 1990.

However, the plan did not work for multiple reasons. The level of mine clearance training provided was very basic and equipment, such as sensitive, military-style mine detectors, were not generally available. Moreover, in an extremely difficult and volatile security situation, returning groups of Afghan ex-fighters or mujahedeen with metal detectors and bags of explosives could just as easily have destabilized Afghanistan further. Even if the civilian deminers went in, there was no method of enforcing safety standards or to properly record and regulate their work. Finally, had this scheme been successful, the ability to continually train such large numbers of civilians would have been curtailed anyway.

In February 1991, all contributing nations, except Australia and New Zealand, withdrew their contingents from Operation Salam due to commitments in the first Gulf War.

Afghan Demining NGOs

Due to ongoing insecurity in Afghanistan, refugees did not return in large numbers. UNOCHA began liaising with potential partner organizations to have them undertake mine clearance work on a more organized and controlled basis. There were over 100 NGOs conducting relief activities in Afghanistan and Pakistan at that time. However, none of these nongovernmental organizations worked in mine clearance, so UNOCHA decided to create specialized organizations to fill this void.

The training camp near Peshawar now trained fewer people but to a higher standard, and the graduates were employed by one of the new Afghan mine clearance NGOs according to predetermined needs. Although the U.N. had decided to establish Afghan organizations that would undertake mine clearance work, two other international mine clearance organizations also had their beginnings around this time. The first was the British charity The HALO Trust, standing for Hazardous Areas Life-support Organisation. HALO was first registered as a charity in the United Kingdom in 1988 by Colin Mitchell and began small-scale clearance operations in and around Kabul in 1989. With its roots in Afghanistan, the second international organization was MAG (Mines Advisory Group), another British NGO. Rae McGrath, founder of MAG, conducted the first survey of mined areas in some of the eastern provinces of Afghanistan and published a report under the name of MAG.

Organizational Changes

Before 1991, the mine clearance effort consisted of a series of separate U.N. funded projects, where each of the newly formed Afghan demining NGOs
were given a particular thematic or geographic task. Some were organized to do mine clearance work, which was gradually referred to as humanitarian de-mining to differentiate it from the military combat term of minefield breaching. One such Afghan NGO, the Organisation for Mine Clearance and Afghan Rehabilitation (OMAR) undertook mine awareness or safety education campaigns in the refugee camps, while the Mine Clearance Planning Agency (MCPA) was set up to conduct minefield surveys, produce minefield maps and coordinate the work of the other NGOs. This latter task was doomed to fail, as traditionally NGOs dislike being coordinated by anyone, let alone another NGO. The funding for all projects was provided through UNOCHA.

Due to public criticism of slow progress and the way the landmine problem was being dealt with in Afghanistan, UNOCHA commissioned an independent evaluation to review the situation. The independent review was quite critical of the whole mine clearance set-up and identified over 40 areas where improvements could be made. It recommended that in the absence of a recognized government in Afghanistan, there should be more central oversight and coordination exerted by the U.N., along with other technical and operational changes. In December 1991, I assumed the position of mine clearance program manager, and together with the head of UNOCHA, Martin Barber, studied the evaluation report in detail, and devised a plan to introduce a more coordinated and centralized response to the problem.

We moved MCPA from Peshawar to our headquarters in Islamabad in early 1992. MCPA brought their minefield database and operations staff to Islamabad, and the combined offices were responsible for coordination, tasking, training, accident investigation, quality control, etc. The first National Mine Clearance Plan was issued in 1992, which set the priorities for awareness, survey and clearance work, and also outlined targets and funding requirements.

Survey

Due to security issues, it was not possible to conduct a national survey at the outset of the program. However, an excellent system of technical survey was established. Highly trained surveyors from MCPA would go to areas in Afghanistan where refugees were returning and conduct what were then known as Level 2 Surveys, now called technical surveys. The surveyors would collect information from locals and determine the minefield boundaries (along the lines of today’s land release concepts) using their detectors, marking the perimeter with red-painted rocks (as other marking material such as wooden stakes would be stolen). Surveyors would also make test lanes through the mined area to determine the types and number of mines that were present. Once a detailed, hand-drawn map was produced, the surveyors were required to predict how long it would take to clear the minefield. These forecasts became surprisingly accurate as time passed. The completed survey maps were put into the
priority system, and the tasks subsequently allocated to one of the demining NGOs to clear.

It was not until 1993 that increased funding and an improved security situation allowed MCPA to undertake a national-level non-technical survey. The aim of the survey was to better quantify the landmine problem, to help establish priority areas for clearance and to assist with effective, long-term planning of clearance operations. Trained interviewers, both men and women, conducted surveys with civilians in most provinces and districts of the country. The results were staggering; throughout Afghanistan as many as 20 civilians were killed or injured by landmines every day. Over 900 villages in 162 districts reported mine problems, and 2,300 minefields were identified covering an area of 380 sq km.

Together with refugee tracking figures provided by the United Nations High Commissioner for Refugees (UNHCR), this survey was the basis of our planning for many years to come. Because the total area affected by landmines was so large, each minefield was classified as high or low priority before it was scheduled for clearance. The determining criteria were as follows:

- All local groups must be united in requesting assistance
- Area must be secure and free from fighting
- Area is free from opium poppy cultivation
- Population must be able to draw immediate socioeconomic benefit
- Refugees must already be returning to the area
- Some support is to be provided by the local population
- Proof that funded rehabilitation or development projects are delayed due to mines of 30 men (the same as a military platoon), with each breaching party consisting of three people. The first member of the breaching party operated with a long stick or a thin metal rod, gently feeling for trip wires, the second operated the metal detector and the third was the prodder man. In the military setting, the first person also acted as a lookout and would be armed with a rifle to provide protection.

It quickly became apparent that this process could be done more efficiently. The three-man breaching parties were immediately reduced to two men, while a section leader usually oversaw four or five breaching parties at any one time. After a series of trials in 1993, the program instituted a one-man drill where the detector operator laid down his detector after a reading and prodded his own signal. This, along with other changes such as reduced travel times and shorter breaks, helped improve clearance rates and efficiency.

**Mechanical.** The program also had a mechanical component. UNOCHA purchased two Aardvark flail machines in 1990, but while it was thought that they had great potential to speed up the clearance rate, the practical difficulties of security, logistics, maintenance and fuel consumption created excessive down time for the machines. Moreover, identifying suitable minefield sites for the machine to work was similarly difficult, and the machine did not guarantee full clearance.

Vegetation clearance was not normally problematic, except around irrigation canals. The program

![An Afghan deminer inspecting a POM-Z fragmentation mine. In the early days of the Afghan mine clearance program, protective equipment was not available for deminers or visitors.](Photo courtesy of author.)
later used a number of armored back hoes to prepare canals for clearance, and HALO experienced some success with armored bucket loaders when removing rubble from damaged houses in Kabul.

Dogs. RONCO ran a mule program during the Soviet-Afghan war, providing mules to the mujahedeen to ferry supplies through the mountains into Afghanistan. After the Soviet withdrawal this was converted to a mine detecting dog program. RONCO established kennels, veterinarian services and training facilities in Pabbi on the outskirts of Peshawar. The training regime for the dogs appeared sound, but their employment and tasking in Afghanistan was haphazard. The United States wanted to move forward from this commitment, so the project was reorganized in 1992 under the Afghan NGO known as the Mine Dog Centre.

Up until 1992, the method of employing dogs was to assign a few dogs and their handlers to a manual demining team. However the majority of manual demining team leaders did not trust the dogs. They would often run the dogs over an area, and even if the dogs found nothing, would go over the same area with manual deminers. This was because the team leader had to sign a paper at the end of a job stating that the area was clear of landmines. The result was that it actually took more time, not less, to clear an area.

A decision was made in certain cases to make the dog team leader the person who signed the certificate declaring the area was clear. Trials were set up and the new groups had four dogs and handlers, along with a section of manual deminers. This proved to be more efficient and the speed at which these groups worked was amazing. To mitigate the risk of a missed mine, two or three dogs went over the same area to make sure nothing was overlooked. By using the dogs to their full capacity, they were very quickly able to eliminate areas that were not mined.

**Resource Management**

Evaluators and journalists visiting the program often asked questions such as “What is the rate of mine clearance” and “How much does it cost to clear landmines?” The daily rate of clearance by a manual deminer varied greatly, depending on the conditions. A manual deminer could clear, on average, between 10 and 100 square meters per day. The clearance rate for dog teams was much higher and while the advertised clearance rate for the flail machines was also much higher, it was rarely achieved.

The cost of mine clearance was difficult to determine. While donor contributions were simple to quantify, other support such as seconded technical advisers and grants of equipment were more difficult to monetize. As a rough measure, we totaled up our different types of income for the year and divided it by the total number of square meters of land the NGOs had cleared. This consistently worked out...
to about US$1 per square meter; this was a figure that was often published.

The cost of clearing an individual landmine was even more problematic. Based on the annual income of the program divided by the number of mines found, each mine cost approximately US$300 to clear. This figure was widely used in the international press, particularly to highlight the fact that a weapon that cost only a few dollars to buy and place in the ground, was now costing hundreds of dollars to clear. However, this figure needed to be clarified. If teams were working in large, defensive minefield belts, they would find many mines quite easily and the cost per mine would go down. Alternatively, a road or an agricultural field only needed a couple of mines to prevent people from using the area completely. Despite attempts to reduce the area that needed to be cleared down to the minimum using the survey teams, large areas often yielded only a few mines. In these cases, the cost could rise as high as $1,000 per mine.

Post-1995

In 1995, the program continued despite immense difficulties during the Taliban period; subsequent U.N. program managers were Bill van Ree and Ian Bullpitt. Dan Kelly ran the program during the period of the U.S. invasion in 2002 and after that the new Afghan government asked the U.N. to continue running the program, thus Alan Mac Donald and Abigail Hartley from UNMAS continued the work. In 2012, Mohammad Sediq Rashid took over as the first Afghan Director of the United Nations Mine Action Center for Afghanistan (UNMACA), and in recent years, efforts have been made to have the Afghan government and their Department of Mine Clearance take over full management of the program. After 26 years of operations the program has grown to involve 52 NGO or commercial organizations employing over 8,000 Afghans. Over 80 percent of minefields have been cleared and Afghanistan has set itself the target to be mine free by 2023.1

See endnotes page 67
Project Renew’s Prosthetics and Orthotics Mobile Outreach Program

Project RENEW established a mobile outreach program to provide prostheses, orthotics and education to explosive remnants of war survivors in the remote communities of Vietnam.

by Dang Quang Toan  [Project RENEW]

According to a 2014 report compiled by Vietnam’s Department of Labour, Invalids and Social Affairs, Quang Tri province currently has 37,292 persons with disabilities, 13,023 of whom were disabled by Agent Orange and 5,094 by explosive remnants of war (ERW).1,2,3 Disabled persons living in rural areas often live in poverty and do not have access to basic services. For those with injuries resulting from unexploded ordnance (UXO), prosthetics are difficult to obtain.

In 2008, Project RENEW implemented its Prosthetics and Orthotics (P&O) Mobile Outreach Program to assist persons with disabilities as well as those injured from Agent Orange. Quang Tri province has more than 613,000 residents; 71 percent of the total population lives in rural and mountainous...
areas on both sides of the former demilitarized zone (DMZ). During the Vietnam-American War, Quang Tri was one of the most heavily bombed and shelled areas in the history of warfare with 83.8 percent of all land contaminated with UXO, landmines and cluster munitions. Since 1975, ERW accidents have caused 8,516 casualties (3,422 deaths). Quang Tri province was also heavily affected by Agent Orange during the Vietnam-American War. According to the Quang Tri Association for Victims of Agent Orange/Dioxin, Agent Orange/Dioxin has infected and caused disabilities in 15,485 people in the province.

Project RENEW’s P&O Mobile Outreach Program delivers rehabilitation services to persons with disabilities, spending an average of four days per month in the most remote and poorest communities. The team travels in a van equipped with tools and equipment necessary to conduct on-site examinations to cast, fit and adjust custom prostheses, ensuring amputees and other mobility-impaired children and adults can function comfortably with basic quality and low-cost prostheses and assistive devices. The average price for a prosthesis is US$280, the lowest price for the most basic prosthesis available in the region. Comparatively, the general price for a basic prosthetic leg is $10,000 in developed countries.

By August 2015, RENEW’s P&O program examined about 1,000 ERW survivors who lost limbs in Quang Tri, providing them with artificial limbs and other assistive devices. For persons with disabilities, these prostheses restore dignity, self-reliance, productivity and the ability to contribute to society. Initially, the Office of Weapons Removal and Abatement in the U.S. Department of State’s Bureau of Political-Military Affairs (PM/WRA) and the Norwegian Ministry of Foreign Affairs co-founded this program, which is now supported by funding...
from American veterans, private donors and the “Friends of Project RENEW” account. The program is unable to operate on a full-time basis, subject to availability of funds, with some discontinuation for the successful P&O operations due to funding termination. In addition, Project RENEW’s P&O program worked with the Quang Tri Department of Health to organize 27 training sessions on community-based rehabilitation for 540 P&O beneficiaries and local health staff to teach those with amputations about physical therapy, proper care of stumps and how to use prostheses for optimum mobility. The training aims to help participants network confidently, recommend follow-up support and special assistance, and inform Project RENEW staff when beneficiaries have problems with their prostheses.

Moving Forward

In addition to providing artificial limbs to ERW survivors and persons with disabilities, Project RENEW plans to assist Quang Tri Provincial General Hospital in reactivating the Prosthetic Workshop, which could not provide P&O support to survivors over recent years due to lack of human resources. Project RENEW will accomplish this with funding donated to the “Friends of Project RENEW” account to send two new staff to the Prosthetic Workshop for 12 months of training from October 2015 to September 2016 at the Vietnamese Training Centre for Orthopedic Technologies School in Hanoi, the only school providing orthopedic training to technical staff throughout Vietnam. Upon completion of training, the rehabilitation facility will host three technicians to serve ERW survivors and persons with disabilities in need of prostheses and will serve as a logistic center for P&O operations in Quang Tri and neighboring provinces.

See endnotes page 67
Roots of Peace: Cluster Munitions to Crops

By facilitating the removal of explosive remnants of war in rural Vietnam, Roots of Peace (ROP) aims to restore contaminated farmland to a safe, productive state. ROP encourages economic empowerment by training farmers in the production of cash crops, such as black pepper and taro.

by Tucker Kühn and Heidi Kühn [Roots of Peace]

Fifty years ago, Operation Rolling Thunder began when U.S. troops were first sent into Vietnam in March 1965. The year 2015 marks both the 40th anniversary of the end of the Vietnam-American War and the 20th anniversary of normalized relations between the United States and Vietnam. Yet countless explosive remnants of war (ERW) such as cluster munitions and other unexploded ordnance (UXO) remain, preventing farmers from accessing their land. According to the Vietnamese government, more than 80 percent of the land in Quang Tri, a province in the former demilitarized zone (DMZ), remains riddled with these legacies of war. This contamination continues to place communities at risk, restricting safe access to land required for housing, agriculture, infrastructure and
Nguyen Dinh Thu is a Vietnamese farmer and UXO survivor living in Quang Tri. While working in the fields one day as a teenager, he saw a shiny object that appeared after a heavy rain. As he tried to excavate it, the UXO exploded, throwing Thu forward and causing the loss of both of his arms. After several surgeries, he had no option but to return to the same land where he was injured. Despite his injuries, he forged ahead to pursue an agrarian livelihood on his family farm.

ROP offered Thu the opportunity to participate in the SHADE program, as pepper is a traditional crop in Son Ha village where he lived. MAG and ROP cleared the land of 11 more pieces of UXO, enabling Thu and his family to plant pepper trees and safely earn a living. In total, MAG cleared 9,721 sq m (2.40 ac) of land at 17 ROP SHADE pepper farms from May to August 2012, finding and destroying 69 pieces of ERW.

Community development. Central Vietnam, particularly provinces located on either side of the former DMZ, was the scene of multiple ground battles and was subject to intensive air and naval fire.

SHADE
In 2011, ROP expanded the SHADE program to work with farmers in provinces located along the former DMZ—Quang Tri, Quang Nam and Quang Binh provinces—establishing commercial farming for the high-value crop black pepper. SHADE provides more than 1,000 farmers with modern-day farming techniques such as disease prevention as well as harvest and post-harvest production. To ensure quality and that quantity standards are met, SHADE focuses support on every aspect of crop production and handling and aims to help farmers develop their businesses. Although this region is among the poorest in Vietnam, farmers contribute 50 percent of the cost of trees. This initial investment endows farmers with a sense of propriety and pride in the land they work.

Partnership
MAG (Mines Advisory Group) and ROP have collaborated on area clearance in support of ROP agricultural projects since May 2012. During this time frame MAG cleared 54 sites
(a total of 37,839 sq m [9.35 ac]), which provided farmland to a total of 322 small-scale farmers and their families under the ROP program.

In October 2014, ROP raised US$134,000 for SHADE. The Office of Weapons Removal and Abatement in the U.S. Department of State’s Bureau of Political-Military Affairs (PM/WRA) provided a matching grant to ROP to clear the land of UXO in preparation for more farms being released for black pepper production. These efforts will complement phase two of the SHADE Project, which will be centered less on providing technical inputs to already existing project participants and focused more on ensuring the pepper produced is of a high enough quality to sell on international markets for higher prices. Expansion of the project will also continue according to the SHADE model of equipping farmers with the necessary knowledge and techniques for successful production. MAG is currently recruiting, training and preparing to deploy four five-person clearance teams to support ROP agricultural projects. The clearance teams will conduct land-release activities on sites identified by ROP throughout Quang Tri. In total, 276,000 sq m (68.20 ac) of land will be released for pepper planting, production, harvest and sale according to the SHADE model. In addition, the Rotary Club of San Francisco generously donated $10,000 in January 2015 to support this next phase of the project.

See endnotes page 67

Tucker Kühn joined Roots of Peace full-time in 2008 after serving part-time for several years in various positions. In 2013, after spending three years in Vietnam as the ROP country director, Kühn returned to ROP headquarters in California to take the role of director of operations. Leveraging his experience and perspective gained from his work in the field, Kühn is responsible for managing home-office operations while overseeing worldwide operations. A graduate of the University of San Francisco, he has worked in several countries including Afghanistan, Cambodia, Colombia, Croatia, Kazakhstan, Laos, Vietnam and Yemen.

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Effectiveness of GIS in Mine Action

According to a survey conducted by Geometric Solutions, Ltd., the usage of a geographic information system (GIS) stands to benefit the mine action community within the context of strategic planning and operational decision-making. Furthermore, web-based GIS can provide mobile spatial data for operations and lead to an overall improvement of mine action operations.

by Hansie Heymans [ Geometric Solutions, Ltd. ] and Arie Claassens [ Esri ]

In order to assess the diverse opinions of the mine action community, Geometric Solutions, Ltd. conducted a survey from October to December 2014. Various mine action stakeholders were invited to take the 23-question survey, covering different demographics, geographic locations and organizational themes. The survey’s main goal was to gauge whether the mine action community would value the benefits that a geographic information system (GIS) could offer as a Spatial Decision Support System (SDSS) and to what degree GIS solutions are already in use within the mine action field.

Mine Action Community Survey Analysis

In total, Geometric Solutions, Ltd. received 101 responses; however, only 71 respondents completed all 23 questions. As a result, the findings presented here only cover the fully completed questionnaires. A summary of the respondents show that 93 percent are male and 60 percent are between the ages of 20 and 40 years old. In terms of sectoral representation, 46 percent work for the U.N. and 25 percent for commercial companies, with the remainder working in nonprofits, non-governmental organizations or consulting environments. Of the 71 respondents, 48 percent work in top- or middle-management positions and indicated that they currently or have previously used GIS when making decisions.

Of the respondents, 34 percent directly work or participate in mine-clearance operations, while 28 percent work in the program-management field. Only 15 percent of the respondents work in GIS sections, which is in accordance with the majority of respondents falling in top- or middle-management positions. Of the respondents, 42 percent work in country programs, while 20 percent work in the headquarter offices of their respective organizations. The majority of the respondents work in Africa, Asia and the Middle East, with some respondents working in multiple regions.

Results indicate 85 percent of respondents are familiar with GIS and use GIS on a regular basis. In addition, 83 percent of respondents noted that most of the time GIS is used to produce mapping products and provide a better spatial understanding of the mine action problem. Depending on the nature of the mine action problem, 40 percent said they use GIS for spatial analysis, while 35 percent use GIS to assist with data cleanup activities.

Of the respondents, 55 percent have direct access to GIS, while 33 percent do not. The majority reported that their organizations have sufficient GIS staff, while 24 percent reported insufficient GIS staffing. Given that 45 percent of respondents think their organizations will invest in GIS and a further 31 percent believe their organizations might invest in GIS, this suggests that the mine action community understands the potential value of GIS to assist in intelligence and decision-making processes.

Understanding the Operational Value of GIS

GIS can be used for different types of analysis that assist decision-makers at an operational level, which means that organizations will be able to make better decisions on the probability of finding mines or making use of the appropriate resources for the clearance task at hand. Results indicate that 69 percent of respondents use GIS as a decision-support system for strategic planning, operational decision-making and prioritizing. In addition, 69 percent of the respondents also reported that they understand the associated risk of using GIS to make better decisions on the probability of finding mines or assigning appropriate resources during clearance operations. From the literature review, GIS was used to classify either the area or the hazard itself, but limited research has illustrated the prediction of finding mines during clearance operations. On the other hand, available evidence
suggests that GIS is used to assist with assignment of appropriate resources for clearance operations.

Mobile GIS solutions can be used to capture spatial data directly into databases, which can improve data quality and make data immediately available to stakeholders and decision-makers. Seventy-nine percent of the respondents indicated that such mobile GIS solutions would be useful.

In contrast to the earlier finding where 69 percent reported that they have used GIS as a decision-support system for strategic planning, operational decision-making and prioritizing, 45 percent of the respondents indicated that insufficient organizational awareness on the value of GIS made obtaining GIS solutions difficult. A further 27 percent indicated that limited resources and skills were the biggest challenges for organizations to obtain access to GIS solutions and products. Moreover, organizations seem reluctant to develop existing GIS capabilities on account of not understanding the potential worth of GIS.

Providing direct access to national mine action databases, or a summary thereof, is one way of promoting transparency to all mine action stakeholders, which can be achieved by using modern web-based technology solutions. An ArcGIS online solution, used to assess the effectiveness of GIS as a decision-support system for mine action on a global level, was made available to respondents for evaluation. Of the respondents, 61 percent indicated that a web-based GIS would be useful to their organization, while 21 percent suggested that a non web-based GIS would be more useful.

In regards to why respondents think that global web-based GIS tools do not exist for mine action, 27 percent suggested limited resources, and 34 percent pointed to insufficient understanding of the value GIS adds to decision-making processes. Indeed, 21 percent indicated a lack of political motivation to promote and establish such a solution. Of the respondents, 80 percent believe the ArcGIS online solutions can be used as a decision-support system at a global level to make policy decisions such as the allocation of funding.

Participants made the following comments at the end of the survey:

- “It is important to define a minimum set of indicators.”
- “GIS analysis generates facts, while political considerations can ‘ignore’ facts; mine action should continue to base planning on facts, not political considerations.”
- “Policy decisions such as the allocation of funding of mine action depend on a wide range of non-spatial as well as spatial factors. Potentially there is value in providing such global level information spatially, yet this should be considered only as one source (of many) types of information, which could be used to assist with decision-making.”
- “Global comparisons of data might reduce national governments from sharing such data (or even making it available at any level to the international community).”
- “Simplified GIS systems can be used by an ‘ordinary’ person—the web viewer is a great example of this.”
- “The GIS is a powerful tool, but poor data quality is the main obstacle.”
- “Potential for GIS use on the country/region level for planning and prioritization.”

## Figure 1. Results for the question related to global web-based GIS for mine action.

Figure courtesy of Hansie Heymans.
Recommendations

In general, the results from the survey confirm that the mine action community understands the advantage of GIS within the context of strategic planning, operational decision-making and prioritizing. However, operations in the field of mine action hesitate to invest in existing GIS capabilities because the potential return on investment is not clear. As a means of assisting decision-makers, global spatial solutions are generally well accepted, but concerns such as data quality and insufficient political support from national authorities are likely to prevent these global systems from further development.

The complexity of current GIS solutions and the familiarity respondents demonstrate with GIS need consideration when evaluating these responses. Traditionally, significant intellectual investment is necessary for an individual to become au fait with the steps required to produce usable GIS outputs. If this restriction can be reduced by the implementation of automated or geo-computational processes, such as fuzzy logic in the interpretation of incident reports by using the respondents’ input, the quality of the GIS input and output will markedly improve the utilization benefits of GIS as an SDSS.

In essence, by simplifying the processes required to produce spatially oriented outputs and delivering this information via easily accessible platforms, decision-makers have the opportunity to interact with and examine the spatial and non-spatial data impacting mine action planning activities.

The value of web-based GIS is becoming increasingly obvious, as evidenced by the growing adoption of web technologies by traditional GIS companies and the surge in online mapping applications. Respondents’ answers to questions suggest an understanding of the opportunity for GIS to provide practical utility within mine action programs. However, respondents seem tempered by the impact of politics and political processes. Responses also indicate that the values gained through the development of GIS capabilities via tangible projections and training would be required to convince decision-makers with little to no practical GIS experience.

Web-based GIS delivers an accessible, analytical reporting platform. Furthermore, online GIS tools can provide the functionality required by data capturers, GIS operators, compliance officers, directors, planning officers, etc. Accessible via mobile devices ranging from smartphones to laptops, these tools operate just as well on static desktop systems. The primary consideration for the deployment of web-based GIS no longer rests with the computing power of end-user devices; it is determined by the quality of the data connection between the web GIS and end-user device.

By leveraging the power of web-based GIS, mine action practitioners can increase the quality and depth of spatial data operations, leading to an improvement in the quality of mine action operations. See endnotes page 67

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Research and Development in ERW and Mine Action Technology

Sponsored by the U.S. Department of Defense
Unexploded Ordnance Center of Excellence (UXOCOE)
Collaborative ORDnance Data Repository (CORD)

Until recently, the mine action and broader humanitarian disarmament community have relied on ORDATA for ordnance information. However, the Geneva International Centre for Humanitarian Demining, James Madison University and software-development company Ripple Design developed a novel aid to using ORDATA: the Collaborative ORDnance data repository (CORD). Representing a significant update to the data set, CORD is an ordnance-identification system featuring Web 2.0 concepts that allow individual users to contribute updates to the data.

by Dionysia Kontotasiou and Olivier Cottray [ Geneva International Centre for Humanitarian Demining ]

CORD is a comprehensive approach to solving the aforementioned issues in mine action as well as the broader areas of humanitarian disarmament and human rights domains. CORD is a collaborative ordnance data repository for the extended humanitarian disarmament community built on Web 2.0 concepts, where data users contribute by keeping the data up to date. This approach could bring exciting new possibilities to the humanitarian disarmament field while significantly cutting maintenance costs. CORD further innovates through the use of semantic technologies that move away from relational databases and facilitate querying in human language as well as offer some built-in analytical capacity to answer questions, such as “in which countries is ordnance X used?”

CORD’s main role is to act as an interface for heterogeneous resources, which can be found in several databases. These ordnance data resources are structured in a semantic taxonomy or ontology, which allows for resource querying in order to provide a global collaborative ordnance data repository to any user requesting dynamic content.
Typical CORD uses

- Access to the research and development community
- Applications, like IMSMA, that need to produce statistics based on ordnance data
- Assistance identifying links between ordnance and humanitarian law
- Donors for setting reporting requirements
- Improved monitoring via nongovernmental organizations
- References for mine action community professionals
- References from national authorities for reporting and standardization

Use Case 1: IMSMA. The IMSMA application references ORDATA for ordnance data. However, due to ORDATA’s high maintenance costs, ORDATA is not up to date, nor is ordnance data inside IMSMA. By building their own personalized copies of the ORDATA databases and integrating them into their IMSMA installations, countries have avoided issues of obsolete data. Alternatively, this creates heterogeneity that prevents countries from comparing statistics. By using CORD, IMSMA and other applications relying on ORDATA, mine action users can link data across database boundaries and seamlessly enable more intuitive queries, searches and navigation. CORD will also facilitate more advanced data analysis and integrative knowledge discovery based on the huge web of data, thus improving the quality of statistics.

Use Case 2: Mine action users. The professional mine action community often needs information on specific items, namely technical information concerning various explosive remnants of war (ERW). Currently, that information is decentralized and not easily accessible in a comprehensive way. By using CORD, mine action users can find necessary information in an intuitive format.

Use Case 3: Academic users. Academic institutions can also access an online repository of gathered information for ordnance data to support various research initiatives studying the impact of landmines and ERW contamination. CORD can be seen as an important data source for attempting to answer questions, such as “What are the specific impacts of specific types of munitions?” While the impact data would originate from other sources, ordnance characteristics could be extracted from CORD.

Desk Study

Several ongoing projects outside of CORD approached the same topic from different angles. A conceptual desk study was performed prior to CORD implementation with the following objectives:
- Review existing ordnance systems
- Evaluate current systems in terms of modularity and reusability
- Spot commonalities and differences between ordnance systems

in order to create a mechanism for combining concepts with the aid of ontology and ability to provide reusable fragments.

Methodology: In order to get an overview of existing ordnance systems, the following methodologies were used:
- Contact with internal GICHD experts
- Contact with external expert organizations and companies: Fenix Insight Ltd, Golden West Humanitarian Foundation, Spinator AB, Nato Support and Procurement Agency
- Review of available applications: ORDATA, CMID Tool, EOD-IS (presentation made by Spinator AB), Weapons Law Encyclopedia
- Review of online databases: Landmine Wikipedia, Federation of
American Scientists, Collective Awareness to UXO

- Review of printed literature: UXO Reference Manual (Laos), Explosive Ordnance Identification Card (Kosovo)

Outcome. The desk study determined no common agreement in the basic terminology for ordnance classification. This is reflected in the following points:
- The ordnance classification is based on the system creator's needs and the planned context of the system's use.
- Different systems use their own classification of ordnances, thereby making it extremely difficult for data to be exchanged between systems, even when structured as relational databases.

Finding a common agreement within the community on a standardized ordnance categorization was challenging. Even if such an agreement could be reached, standards would be impossible to implement with the prominence of relational databases (the common technology used in existing systems today).

Analysis and Design

System architecture. The architecture of CORD can be seen in Figure 3.
Figure 4. Ontology architecture.
The main architectural diagram of Figure 1 depicts the interopera-
tions occurring between the basic modules, external interacting enti-
ties and end users of CORD. The architecture includes the following
components:
• CORD ontology: The back end aims at providing a mechanism for
semantically aggregating information originated from multiple
mine sources (e.g., ORDATA, CMID)
• Ontology management: a whole phase that guided the ontology
development, which included the authoring of the ontology with
Protégé—the prominent tool for developing Web Ontology Lan-
guages (OWL) and the reasoning unit in order to keep the ontol-
ogy in a clear and concise format
• Website: an open source, collaborative, shareable, graphical user
interface
• Simple Protocol and Resource Description Framework Query
Language (SPARQL) endpoint: a query language used for retriev-
ing and manipulating data stored in ontologies—essential in or-
der for external tools to be connected to CORD
• Web services and applications: the external applications that can
be connected to CORD (e.g., TIRAMISU Information Management
Tool, from Spinator AB)
• Senior User 1: guides the requirements from ordnance experts
• Senior User 2: guides the requirements for future applications
that will consume the data served by CORD
• End users: possible target groups that use the website to keep in-
formed about the current ordnance situation.

Ordinance data representation (back end). Since the core func-
tionalities of the framework relies on an ordnance-characteristics com-
bination, a major requirement was the representation and concurrent
communication with numerous heterogeneous data platforms and data-
bases. Two main data models are used for representing knowledge and
information in computer systems. Database models, especially relation-
al databases, have been the leader in the last few decades, enabling effi-
cient storage and querying of information. However, ontologies have
appeared as an alternative to databases in applications that require a
more enriched meaning.

A database model is a representation mechanism designed mainly to
meet the requirements of a particular application or corporation. When
these requirements change, the viewpoint and the schema also need modi-
fication, which is one of the main reasons that another solution for
representing ordnance data was required for ORDATA.

In contrast, ontologies are the result of a collective effort and
should therefore be shared among the community. Ontologies provide
a restriction-free framework to represent a machine-readable reality on
the Web. This framework assumes an open world in which informa-
tion can be explicitly defined, shared, reused or distributed. More-
over, information can be interchanged and used to make deductions or
queries. Thus, databases result from teamwork, and ontologies require
coordination among several work groups.

For CORD to be feasible, a common, modular, shareable ontological
framework is necessary to deal with representation issues and provide
the required infrastructure for decision support. This infrastructure
was provided in the form of an ontology that interconnects ordnance re-
sources available in several databases and Extensible Markup Language
(XML) structures.

CORD moves forward from databases to ontologies for representing
ordnance data, because ontology
• Makes the vision of a database simpler, since it presents the model
beyond a specific implementation of a database (Oracle, MySQL,
PostgreSQL, etc.)
• Allows users access to the database using another alternative to the
classical one, which is using a relational database-management
system (RDBMS) client or the common applications
• Represents the database information structure using the OWL or
Resource Description Language (RDL), which is useful in envi-
ronments such as the Semantic Web, where access to the semantic
content of databases is uncommon
• Enables inclusion of the database schemas in the Semantic Web,
making possible the annotation of dynamic Web pages
• Allows information sharing among heterogeneous databases,
since the information represented is independent from any
RDBMS specification
• Enables homogeneous management of distributed databases
• Allows enrichment of the information represented in the data-
bases and can therefore relate with other kinds of domain ontolo-
gies (using matching or alignment techniques), thus improving
the quality of the information represented
• Makes the representation of complex data types or different data
types (e.g., temporal, spatial, fuzzy) easier to use. Thus, the user
can manage any kind of information using the ontology, which is
quite flexible in the management of any data types or representa-
tion of data.

CORD ontology includes, but is not limited to, the following catego-
ries of data:
• Ammunition characteristics (e.g., high explosive anti-tank
(HEAT), explosively formed penetrator (EFP), armor-piercing
fin-stabilized discarding sabot (APFSDS), high explosive (HE),
tracer, base, bleed, etc.)
• Ammunition storage and transport classification and compat-
ibility group
• Country of existence/use
• Filling (e.g., illumination, white phosphorus)
• Fin/tail (steering/retarding) system
• Fuse system
• Images
• Made from material (e.g., Bakelite, plastic, metal, etc.)
• Manufacturer and country of origin
• Marking system
• Shape and size
• Type/mix of explosives
• Weapon-system category can be used with which weapon system
(e.g., F-16).

Collaborative repository (front end). Since an ontology was selected
to represent ordnance data, an open-source interface was developed to
make these data available.

The main functionalities of CORD front end are
• Collaborative authoring: operations that allow easy and expres-
sive additions of data
• Retrieval: graphical query interface that empowers users to easily
comprise queries and preview query results with different output
formats
• Navigation: intuitive browsing and adoption of the ordnance on-
tology
• Back-end connection: end users can connect to the back end of
the collaborative repository and make use of the semantic struc-
tured data
• Verification: process by which designated administrators and ex-
plosive ordnance disposal experts approve user-submitted infor-
mation and authenticate existing ordnance data.

Sequence diagram. A sequence diagram of CORD is presented in
Figure 5. The basic purpose of using this kind of interaction diagram is
to show how processes operate with one another and in what order. The
important processes are inside the sequence diagram, which describes
completely the main interactive functionality of the system.
Figure 5. Sequence diagram.
Starting from the top of the diagram, an administrator requests authentication (message 1) from the server, which receives the signal and responds with a success signal (message 2) if the authentication process was successful. The server continuously awaits for user signals (messages 3, 5, 7) in order to authenticate them (registered user 1-N). Registered user 1 decides to create a new ordnance category and requests creation from the server (message 9). Immediately, the administrator accepts the ordnance category (message 10). The new ordnance category is viewable from all lifelines, so even a simple user can browse it. Finally, a simple user makes a SPARQL query to the system (message 15), and the system responds with the appropriate results (message 16).

**Expected Benefits**

Generic benefits. CORD will offer a more cost-effective, accessible, reusable and completely expansionistic system,

- ORDATA will be updated and extended. In this way, it could serve as a live reference for all applications that use it in order to produce accurate statistics.
- CORD is financially and timely sustainable. By encouraging access to integrated distributed ordnance resources into one collaborative data repository, CORD stimulates time and cost-effective solutions for ordnance monitoring and resource dissemination.
- CORD is completely open to expansion and reusability. The collaborative data repository will allow ordnance data sharing within the context of relevant stakeholders and expansion to similar domains, which can result in efficient data-management schemes and critically improve productivity of development teams.
- CORD will encourage inclusion of data from related peripheral sectors such as international humanitarian law and weapon systems.

**Technological benefits.** CORD’s main innovation is the homogenization of ordnance resources under a common ontology in order to deliver reliable information to the end user in various and combined ways. The collaborative data repository is critical, since individuals may have a common resource access point for all ordnance data. Major benefits include centralization of resources from different stand-alone databases and fusion of ordnance data through the collaborative data repository, which will be easily accessed by all.

**Analytics**

3,343 users from 124 countries have accessed CORD (September 2014–September 2015).14

**Conclusions**

The main innovations of CORD are the use of semantic technologies and collaborative Web 2.0 concepts to structure and represent ordnance data. Semantic technologies were used to represent and provide dynamic searches of multiple stand-alone ordnance data. Semantic technologies and ontologies promise a more flexible representation than XML-based technologies and flat databases. Data do not need to conform to a tree structure but can follow an arbitrary graph shape. Given the benefits of these technologies and the trends of developments in the Web space, semantic technologies were adopted to represent ordnance data in a structured way, interfacing them via a collaborative website.

Some important constraints with the approach of making an open system is that classified or otherwise sensitive information will not be included in the central system, such as render-safe procedures on how to disarm ordnance. Should an organization using CORD want to have additional information, it can set up private databases extending the data yet still linking to CORD. This architecture also allows organizations to have additional data-verification processes.

For more information, the tool can be found at http://bit.ly/1Lbcpyp. See endnotes page 67.
The development, stability and transformation of much of the world in the twenty-first century depends largely on destroying at-risk and unsecured weapons and munitions, and clearing landmines and other explosive remnants of war. The current international environment presents a complex sets of challenges involving numerous and diverse threats. Providing leadership to the global communities of practice, and disseminating new information about conventional weapons destruction programs is a critical factor in planning and conducting successful foreign programs. The Journal provides a primary resource to donors and practitioners in achieving this objective.

The Journal of Conventional Weapons Destruction provides an information exchange platform for stakeholders addressing the residual environmental, physical and psychological effects of conflict. We are particularly interested in topics regarding the destruction of stockpiles of surplus, obsolete or otherwise at-risk conventional weapons of war; and programs that increase civilian security by protecting lives and property through stockpile management, clearance, survivor assistance, risk education, and capacity building. Other topics concerning post-conflict recovery are considered upon submission.
Remote Risk Education in Syria by Søndergaard [ from page 4 ]
2. “The country is not disclosed due to security risks.
3. Teresa Tavares, email correspondence with author, 28 June 2015.

News Brief: Landmines in Croatia Pose Threat to Incoming Refugees by Hinton [ from page 7 ]

Integrating MRE Into Humanitarian Response in Iraq by Hall [ from page 8 ]

MAG: Mine Clearance in Lebanon by Sutton [ from page 12 ]

Risk Education in Northern Jordan by Aldrich, Fiederlein and Rosati [ from page 18 ]

Solutions for Physical Accessibility and Capacity Building for Increasing Psychological Support in Tajikistan by Muminova [ from page 29 ]
5. The State standards and regulations of the Republic of Tajikistan (RT) 35–01–2012 “Accessibility of buildings and constructions for people with limited mobility.”

Providing Integrated Peer-support Assistance to Landmine Survivors by Amir Mujanovic [ from page 23 ]
1. “All persons who have been killed or suffered physical or psychological injury, economic loss, social marginalisation or substantial impairment of the realisation of their rights caused by the use of cluster munitions. They include those persons directly impacted by cluster munitions as well as their affected families and communities.” Victim Assistance. Convention on Cluster Munitions. Accessed 10 June 2015. http://bit.ly/1UzgRoK.

Caught in the Crossfire: Challenges to Providing Victim Assistance in Colombia by Miller [ from page 33 ]

Evolution of Disability Rights in Iraq by Rutherford and Hinton [ from page 37 ]


Humanitarian Mine Action in Afghanistan: A History by Mansfield [ from page 42 ]


Project Renew’s Prosthetics and Orthotics Mobile Outreach Program by Toan [ from page 48 ]


Roots of Peace: Cluster Munitions to Crops by T. Kühn and H. Kühn [ from page 51 ]


2. In Vietnam, this war is called the American War.


Effectiveness of GIS in Mine Action by Heymans [ from page 54 ]


Collaborative ORDnance Data Repository (CORD) by Kontotasiou and Cottray [ from page 58 ]


12. Numbers were extracted from Google Analytics.

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Articles due 1 July 2016
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How are small arms and light weapons (SA/LW) and CWD proliferation currently affecting the Middle East and North Africa? What broader issues are connected to SA/LW in the region? Other topics of discussion include training, clearance, survey and mapping, victim/survivor assistance, refugees/internally displaced persons, storage and disposal methods, and community risk-reduction initiatives.

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The Journal seeks articles on SA/LW, including marking and tracing, how SA/LW affects humanitarian deminers’ and community safety, creative ways to reduce the number of SA/LW in communities, methods to minimize SA/LW trafficking, prevention of unplanned CWD explosions, and methods to assure weapons ammunition security.

Clearance takes place in a populated village in South Sudan.

Photo courtesy of CISR.

http://commons.lib.jmu.edu/cisr-journal/vol11/iss2/1