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Clearance at Cultural Heritage Sites

The most mine- and unexploded ordnance (UXO)-contaminated countries in the world have long histories of conflict, as well as histories rich with extensive archeological and cultural records. It is not uncommon for known historical sites to be littered with mines and UXO, especially in regions with hundreds and even thousands of years of rich cultural heritage, such as Central and Southeast Asia and the Caucasus. This presents an added challenge to project teams tasked with clearing and safeguarding the land while also preserving the integrity of cultural heritage sites.

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

This article highlights three cases of explosive remnants of war (ERW) clearance at historical and cultural heritage sites in different regions of the world, implemented by multiple humanitarian mine action agencies. One cultural heritage site, Bamiyan in Afghanistan, was a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage site at the time the clearance project was launched, although it was considered endangered due to the presence of mines. The David Gareja monastery complex in Georgia and the Plain of Jars in Laos are on the tentative list for consideration as World Heritage sites.^{1,2,3,4} Success in receiving official World Heritage designation requires submission of detailed plans for site preservation and management, which includes clearance of ERW contamination.⁵ Regardless of a country's aspirations for World Heritage site designation, clearing historical, religious and natural sites that have significant patrimonial importance and the potential to attract tourists, contributes to a country's national economic potential and strengthens its national identity.

Case Study 1: Bamiyan, Afghanistan

The Bamiyan valley of central Afghanistan, located 240 km northwest of Kabul, contains a wealth of sites with historical, cultural and environmental treasures. Bamiyan is best known for two enormous Buddha statues carved from sandstone cliffs in the sixth century and destroyed by the Taliban in 2001. Nearby are ruins of a medieval fortress and town that withstood a Mongol invasion in the 13th century but at the start of the 21st century were imperiled by the presence



Construction work at the fortress of Shahr-i Ghulghulah at the Bamiyan World Heritage Site, Afghanistan.
Photo courtesy of MACCA.

of landmines and unexploded ordnance (UXO). The local residents of Bamiyan, primarily Hazara, a religious minority in the country, lived amidst the constraints forced on communities heavily contaminated by ERW. In 2003, UNESCO declared the Bamiyan World Heritage site threatened.⁶ In cooperation with the Afghan government, mine clearance experts and archeologists, plans commenced to address the problem so the World Heritage cultural site could become safe again.

The Mine Action Coordination Centre of Afghanistan (MACCA) coordinated the clearance efforts with UNESCO, and partnered with the United Nations Mine Action Service (UNMAS) and the government of Japan to launch the clearance project in March 2008. The project, with a budget of just over US\$2 million, began with a humanitarian focus, clearing con-



HALO deminer conducts clearance near Keselo fortress in Georgia.
Photo courtesy of The HALO Trust.

taminated areas in central Bamiyan and conducting village-level explosive ordnance disposal (EOD) tasks to make the local residents safer and open up new economic prospects, including crop diversification projects, the development of new seed varieties and improved crop storage facilities.^{7,8}

Phase II of the project turned its attention to the contamination threatening the historical sites. In a report issued in January 2010, MACCA explains the special approach taken by the team to conduct clearance in this delicate landscape.⁷ While they generally use a number of different techniques and tools to conduct clearance (manual, mine detection dogs, mechanical), the historical sites required use of manual clearance methods as “the sensitivity of the work required a slow and careful approach using extreme caution to avoid causing any damage to the site.”^{7,9} Deminers from the Afghan Technical Consultants (ATC) received special training from archeologists in how to work around the sites and be watchful of artifacts they may encounter while conducting clearance. UNESCO archeologists working on the project also were trained in landmine safety that allowed them to conduct their field work in a mine and ERW-contaminated environment.

The clearance process relied upon close cooperation among ATC deminers, MACCA quality-assurance staff and

UNESCO archeologists, with Afghan Ministry of Culture officials involved in monitoring the operations. All three entities—ATC, MACCA and UNESCO—made adjustments to their usual methods in order to operate with the care needed to clear the explosive contamination while minimizing damage to the archeological sites and protecting the artifacts. The depths to which clearance was conducted were adjusted to account for variability in the terrain and the archeological structures.⁹ Mines were found mixed in with debris resulting from the gradual damage to the structures over the years. Instead of destroying the mines *in situ*, as is commonly done in less sensitive areas, the found mines had to be disarmed and transported to another location for destruction.^{9,10} Because of the buried artifacts and the presence of metal articles in the soil, the manual process progressed slowly but yielded success in clearing the delicate areas while preserving the current condition of the sites.

In September 2009, Phase II wrapped up ahead of schedule. As with completion of Phase I in 2008, a high-profile ceremony commemorated the project’s achievements and the formal handover of the cleared land involved officials from the local and national Afghan governments, UNESCO, MACCA, government of Japan (the donor), and national and internation-



Artifacts found by HALO deminers in the Omalo and Shenako minefields in Georgia.
 Photo courtesy of The HALO Trust.

al media.⁷ As part of the handover documentation, MACCA certified the comprehensiveness of the clearance, the adherence to quality assurance procedures and the possibility of any contamination remaining below the clearance depths. In addition to removing and destroying 14 anti-personnel landmines and over 7,300 items of ERW in 2009 (plus more in Phase I), the deminers uncovered a number of artifacts that became part of the Bamiyan museum.⁷

Bamiyan province offers the possibility of becoming a major destination site for tourists, not just for the historical and cultural significance of the Bamiyan World Heritage site but also because of the natural beauty of the area. In 2009, the Government of Afghanistan established its first national park encompassing the Band-e-Amir lakes region in the province. With completion of the landmines and ERW clearance at the Bamiyan World Heritage site, and the prospects for increased visitors to the region, new tourist development projects are underway, including training of tour guides and hotel and restaurant service personnel, although hospitality infrastructure remains limited.¹¹ Other infrastructure investment, such as road and airport improvements, is required before large numbers of tourists can make the trip to Bamiyan. Also, uncertain security in Kabul and other parts

of the country continues to stymie development, even when local conditions are promising.¹²

The Bamiyan clearance project is a great example of the intersection between mine action and economic development, as the successful clearance completion opened the doors to new development possibilities, both in tourism and agriculture. Development of the Bamiyan World Heritage Site continues, with UNESCO announcing in November 2014 a global design competition for the new Bamiyan Cultural Centre.¹³

MACCA reports that the experience gained at Bamiyan was applied to clearance at a copper mine with nearby cultural sites in Logar province, although the presence of the cultural sites at that location were not known in advance.⁹ Similarly, MACCA took the initiative to consult with the Afghan Ministry of Culture about the location of other cultural sites that may be impacted by the presence of mines. The Ministry of Culture provided MACCA with information on 88 other cultural heritage sites, of which MACCA identified 14 located within the 1-kilometer (.621 miles) buffer zone of some “already recorded mine-contaminated areas.”⁹ MACCA has also communicated to its implementing partners that, if they work in cultural heritage sites or uncover cultural heritage items, they are to inform the relevant governmental departments and MACCA.⁹

Case Study 2: Udabno, Georgia

The HALO Trust (HALO) conducted clearance on three historical sites in Georgia, namely the David Gareja monastery complex located on the Udabno firing range, Tusheti Protected Areas in Khakheti region and the Kaman Holy Spring site in the breakaway region of Abkhazia. Kaman was the first historical site that HALO cleared in Georgia with clearance activities funded by the U.K.'s Department for International Development beginning in 2003. The procedures used in Kaman on the handling of historical artifacts and community-liaison efforts were adopted for clearing Udabno and Tusheti years later.

Best practices developed through clearance at the other historical sites were further refined at Tusheti where air-dropped mines littered a gorge and contaminated a 17th-century fortress increasingly popular with tourists. Once again, careful handling of debris found during clearance uncovered important artifacts, and emphasis on shared goals among all stakeholders allowed for successful clearance while preserving the historical site and its buried record. In all of these cases, close cooperation among stakeholders, good communication, detailed planning and careful execution of plans opened important historical and religious sites to increased access by tourists and new business opportunities.

HALO's most recent clearance project in Georgia is Udabno, which is preparing for inscription as a World Heritage site.

Udabno Former Soviet Training Area, KvemoKartli/Kakheti Regions

During the Soviet Union's occupation of Afghanistan, the land around the village of Udabno became part of a large military training and live firing range that straddled the border between the Soviet Republics of Georgia and Azerbaijan. The area is part of the David Gareja monastery complex, founded in the 6th century A.D., which had been abandoned since the Bolshevik Revolution. The Soviets used monastery buildings as targets during military training. Typically during live firing exercises, 10 to 20 percent of ordnance fails to function as intended and it remains unexploded, presenting a threat to anyone subsequently disturbing it. HALO reports suggest that a wide range of live ammunition, including air-dropped bombs, were used at Udabno.

Since Georgia's independence, use of the area for military training has ceased. The Georgian Army still uses a nearby area away from the monastery complex. Land ownership was transferred to the Patriarchy of Georgia, and the government of Georgia submitted the site to UNESCO for its tentative World Heritage site list. The buildings of the monastery

complex are gradually being restored, and the area has become one of Georgia's key sites of religious pilgrimage and tourism. According to HALO, at least two UXO accidents occurred in this area, one of which resulted in the death of a shepherd. The people of the village of Udabno are aware of the danger and consequently they do not frequent the area, despite its religious and cultural significance. The part of the training area within Azerbaijan is being cleared by the Azerbaijan National Agency for Mine Action in partnership with NATO and funding from the U.S. Government.

Funded by the U.S. State Department and the government of Japan, HALO operates 10 clearance teams in the area. According to HALO, the contaminated area is surveyed to be 65 million square meters (25.1 sq miles). HALO began clearance in December 2013, and as of 31 January 2015, 21 million square meters (8.1 sq miles) of surface area was cleared through battle area clearance (BAC) methods. More than 500 items of UXO were found and destroyed—30 of which were within 500 meters (226 sq ft) of historical structures.

HALO knew prior to clearance that there would be specific cultural and historical considerations for operations at the site, but this did not cause any delays. Clearance assets were not deployed any differently and BAC proceeded per regular standard operating procedures (SOP), although HALO deminers and team leaders received sensitivity briefings and were informed to be particularly careful not to disturb certain obstacles. For example, HALO's SOPs typically warrant the cutting of vegetation in order to provide deminers a better view of the ground surface to visually identify potential ERW. In Udabno, cutting of vegetation in certain areas is prohibited due to conservation status; thus, deminers spent more time checking inside thick vegetation rather than cutting it down. Furthermore, deminers were instructed not to move or damage any parts of the ruins or buildings in the area.

HALO took additional precautions when destroying various UXO found near the historical structures. Because the safest method to clear the unexploded items would be to destroy them *in situ*, EOD officers were given orders to provide additional tamping with sandbags for any items being destroyed within 500 meters of historical sites. Full overhead and side tamping was used in order to prevent any fragmentation or blast from damaging historical structures.

HALO learned two lessons from clearance in Udabno. First, HALO discovered that scrap-metal collectors were removing large-caliber UXO from the area and taking them to a nearby junkyard. To ensure the safety of the local population, HALO inspected the junkyard and removed and destroyed all dangerous items, giving safety briefings to the community and lo-



Pilgrims descend a cleared path (with a minefield on either side) to Holy Spring at Kaman holy site in Georgia.
Photo courtesy of The HALO Trust.

cal authorities. The experience emphasized the importance of community-liaison work, particularly near culturally sensitive sites likely to be frequented by civilians. Secondly, HALO's project emphasized the importance of maintaining good relationships with all stakeholders, including landowners, which in this case were the Georgian Patriarchy. The church was appreciative of HALO's efforts: in particular the care and attention HALO gave to preserving the historical sites.

Case Study 3: Plain of Jars, Laos

Dating back to the Iron Age, between 500 B.C. and 500 A.D., the Plain of Jars is an internationally known cultural site in the Xieng Khouang province of Laos. Beyond inviting curiosity and speculation as to its origins, this ancient site maintains significance by virtue of its historic merit and potential to reveal more about the prehistory of mainland Southeast Asia. Approximately 2,500 megalithic jars, fragments and lids

of unknown origin are scattered across 15,000 square kilometers (5,791 sq miles) or jar sites.¹⁴ Local populations believe the jars were purposed for brewing rice wine, while many others have concluded they were used as funeral urns or for collecting rainwater.¹⁵ From 1964–1973, U.S. bombers heavily targeted areas of Laos—including the Plain of Jars—during the Secret War, leaving behind millions of landmines and other UXO that still contaminate the majority of the 90 recorded jar sites today.¹⁶

In 1998, the government of Laos and UNESCO jointly began a multiphase program to develop the Plain of Jars.⁵ This program's goal was to implement the national plan of securing and protecting the site for future development of its historical and archaeological resources in order to nominate the Plain of Jars for World Heritage inscription. The Laotian government and UNESCO organized the program into multiple phases, which included detailed mapping, survey and inventories of

cultural sites within the Plain of Jars, and finally, mitigating threats to culture and biodiversity such as UXO. UNESCO and the Laotian government worked with local communities and commissioned humanitarian mine-action agencies, such as UXO Lao and MAG (Mines Advisory Group), to begin the work of clearing UXO from the jar sites, while still maintaining the integrity of the land and artifacts.¹⁷

In 2004, with funding from the New Zealand government through the New Zealand Aid Programme (NZAID), MAG began the first of two phases of UXO clearance at the Plain of Jars.¹⁸ Phase I, from 2004–2005, involved clearance of the three most visited jar sites. In 2007, MAG conducted Phase II by clearing four more jar sites.¹⁹ In addition to UNESCO and NZAID, MAG coordinated with the Lao National Tourism Administration and the Culture and Information Office, as well as the governor of Xieng Khouang province and the Xieng Khouang Tourism Office. MAG participated in regular coordination meetings and facilitated on-site visits from implementing and cooperating agencies and Laotian government ministries—all of which proved essential for joint planning and successful implementation.

The national plan called for a community-based approach to safeguarding and preserving the cultural sites, thus MAG and UNESCO developed a Village Assisted Archaeo-UXO Clearance methodology where the MAG Laos project team worked closely with the local communities to train villagers in UXO awareness, while MAG prioritized clearing pathways around the jar sites for villagers to safely conduct erosion-control activities along the perimeter. MAG teams also contributed directly to the archaeological research at the jar sites. Clearance methods are similar to those required for delicate archaeological digs: Teams survey and mark the area to be cleared and have to carefully avoid disturbing any finds.²⁰ Methods differ in that the location of each find is an important part of the archaeological record, whereas in UXO removal the location is mainly of interest for removal. With archaeology, the circumstance in which an artifact is buried also provides an important record as opposed to UXO clearance, where the soil record may only be of importance for identifying the item's position.

Therefore, MAG's clearance methodology had to be refined slightly at the jar sites to allow the necessary mapping of each archaeological find. Employing these extra steps added to typical clearance times compared to projects without cultural demining considerations, but it resulted in positive cooperation between MAG and UNESCO and directly aided the ability of

UNESCO to conduct future excavations and investigations vital to applying for World Heritage designation. As a result, MAG clearance teams located important artifacts such as pottery, stone tools and bones, giving clues for interpreting and dating the history of the jars.

With known UXO contamination removed from the Plain of Jars site and Phase IV of the preservation and management plan completed, the Lao government's process for World Heritage site inscription is better positioned to move forward, although progress is slow. However, UXO contamination is not delaying the application process.¹ Based on the experience of the two existing World Heritage Sites in Laos, Luang Prabang and Vat Phou, World Heritage designation should increase the flow of tourists to the site if other infrastructure development advances apace to accommodate the increased demand for access while also adequately preserving and managing the site. Already the region is seeing an increase in visitors, with the provincial authorities receiving assistance from UNESCO and government agencies to develop "sustainable and responsible tourism" in line with the community-based site preservation and management plan. However, the region depends on funds generated by tourism to sustain it in the long term.¹

Conclusion

Although they represent different implementing partners in different geographic regions, all three of these cases of clearance at cultural heritage sites show the importance of strong cooperation among governmental authorities responsible for mine action, culture and preservation, and tourism development; local communities; and international organizations such as UNESCO and project donors. They also indicate the ability of demining agencies to adapt clearance methods to the special circumstances of these delicate sites, and the skill of the deminers in rendering the sites safe for future touristic development and in uncovering historical artifacts while protecting the sites from additional damage.

In all three cases, only minimal adaptation to SOPs was needed, as manual clearance methods already resembled archaeological practices, such as the careful survey, marking and removal of items with only minimal disturbance to surroundings. The demining agencies and their donors not only aided in restoring and safeguarding these sites—thereby protecting civilians and facilitating development—but they also acted as key partners in the wider archaeological recovery and preservation efforts. Therefore, with careful planning and coordination among

stakeholders, demining agencies may be uniquely positioned to help post-conflict countries maintain their cultural legacies without significant deviation from or added costs to clearance operations. ©

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