

Sustainable Stockpile Management in Bosnia and Herzegovina

The Role of EUFOR Mobile Training Team for
Weapons and Ammunition Management

By Jovana Carapic, Prasenjit Chaudhuri, and Pierre Gobinet



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List of abbreviations

AFBiH	Armed Forces of Bosnia and Herzegovina
ASS	Ammunition storage site
AWE	Ammunition, weapons, and explosives/ Ammunition, Weapons, and Explosives (Task Force)
AWE Master Plan	Master Plan on Ammunition, Weapons, and Explosives
BiH	Bosnia and Herzegovina (Bosne i Hercegovine)
Dayton Agreement	General Framework Agreement for Peace in Bosnia and Herzegovina
DIF	Defence Industry Factory
DTRA	(US) Defense Threat Reduction Agency
ESH	Explosives storehouse
EUFOR	European Union Force
EWG	Expert Working Group
FBiH	Federation of Bosnia and Herzegovina
HQ	Headquarters
IFOR	Implementation Force
LCM	Life-cycle management
MoD	Ministry of Defence
MTT	Mobile Training Team
NATO	North Atlantic Treaty Organization
OB/OD	Open burning/open detonation
OSCE	Organization for Security and Co-operation in Europe
PSSM	Physical security and stockpile management
RASR	Regional Approach to Stockpile Reduction

RS	Republika Srpska
SAWAD	Special advisor on weapons and ammunition disposal
SEE	South-east Europe
SEESAC	South Eastern and Eastern Europe Clearinghouse for the Control of Small Arms and Light Weapons
SFOR	Stabilization Force
SOP	Standard operating procedure
TRADOC	Training and Doctrine Command
UEMS	Unplanned explosions at munitions sites
UNDP	United Nations Development Programme
VF BiH	Vojska Federacije Bosne i Hercegovine
VRS	Vojska Republike Srpske

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Introduction

In post-conflict settings such as Bosnia and Herzegovina (BiH), inadequate weapons and ammunition stockpile management and the lack of systematic ammunition surveillance can pose substantial risks. These risks include the degradation and self-ignition of ammunition, leading to unplanned explosions at munitions sites (UEMS), and large quantities of excess (and often improperly



secured) weapons potentially fostering illicit transfers. The establishment of sustainable weapons and ammunition life-cycle management (LCM) serves to reduce these risks.

Establishing sustainable weapons and ammunition LCM systems is a long-term process. It comprises the simultaneous development and implementation of a comprehensive (multi-level) approach to capacity building for physical security and stockpile management (PSSM) in a country's armed and security forces, and a holistic (cross-dimensional) approach to the LCM of stockpiles. This is a complex endeavour. It not only pertains to the internal process of national ownership and the development of relevant structures and procedures, but often involves external assistance by various civilian, military, bilateral, and multilateral partners.

This Working Paper describes the role of PSSM capacity building and training in facilitating the development of a sustainable LCM system in BiH. While the European Union Force (EUFOR) plays a key role in the overall coordination of the LCM process, the EUFOR 'Weapon and Ammunition Storage Site Management' Mobile Training Team (hereafter referred to as the MTT Project) is leading capacity-building activities as part of this process.¹

The paper draws on the 2015 Small Arms Survey Yearbook chapter, 'Less "Bang" for the Buck: Stockpile Management in South-east Europe'. Insights from the chapter are supplemented with desk-based and field research carried out by the Small Arms Survey research team, and the extensive technical expertise of personnel from the MTT Project and the Swiss, Austrian, and Swedish armed forces (see Box 1). The paper also outlines a possible approach for future PSSM field activities in South-east Europe and elsewhere.

The paper has several key findings:

- PSSM and weapons and ammunition LCM should be integrated into post-conflict rehabilitation efforts and peace support operation mandates, not only because of the risks related to unsecured and unsafe stockpiles (such as unplanned explosions or diversion), but also because the (re)installation of a sustainable weapon and ammunition LCM system is a long-term endeavour. LCM therefore needs to be tackled at the earliest stage possible.
- In post-conflict settings the restructuring of the armed forces often results in demilitarization, stockpile maintenance, and security personnel retiring

or finding employment in the private sector. This reduces the capacity of countries to deal with the threats posed by poorly secured and managed weapons and ammunition stockpiles.

- Capacity building for weapons and ammunition storage site management needs to be comprehensively implemented. In particular, international assistance needs to take a multi-level approach to capacity building, one that goes beyond training and includes the donation of technical equipment and related operating and maintenance skills.
- For international assistance to successfully establish, develop, and implement a sustainable LCM system, political buy-in by the host nation (especially at the various levels of the Ministry of Defence (MoD) and the armed forces (tactical, operational, and strategic) is essential.
- A road map with a clearly established end-state and plan of action is key to the creation of a sustainable weapons and ammunition LCM system. This includes the establishment of decision-making and implementation bodies under high-level national authority, such as strategic and coordination boards.

Box 1 A note on methodology

This paper is based on a combination of desk and field research. Desk research involved a review of available information (previous Small Arms Survey publications and official background documents) pertaining to the emergence of the MTT Project in BiH. Field research focused on the work of this project in BiH, especially as it relates to the transfer of responsibility for PSSM capacity building and training from international stakeholders to the BiH authorities, and how the project complements the activities of other international partners.

Various approaches were applied during the field research:

- With the support of MTT Project personnel and the Swiss Armed Forces, more than 25 key stakeholder interviews were conducted with members of the AFBiH and multilateral actors operating in BiH; the interviews took place from September 2014 to December 2015 in Sarajevo, BiH.
- Members of the MTT Project organized field visits to EUFOR Headquarters (HQ) located at Camp Butmir, Sarajevo, and the AFBiH Training and Doctrine Command (TRADOC) in Travnik. The research team also had the opportunity to visit several AFBiH weapons and ammunition storage and demilitarization sites.
- Relevant information and data pertaining to weapons and ammunition destruction and inspection capabilities and capacities were also obtained from the BiH MoD; Joint Staff; and Ammunition, Weapons, and Explosives (AWE) Task Force.

This paper is divided into four sections. The first examines the needs and challenges facing PSSM capacity building in post-conflict BiH, including the post-war management of weapons and ammunition; EUFOR Operation ALTHEA's increasing emphasis on capacity building and training since 2006; and an overview of the MTT Project. The second section develops the notion of a 'comprehensive approach to capacity building' by highlighting the role of the MTT Project in the development of effective PSSM knowledge, attitudes, and practices in the Armed Forces of Bosnia and Herzegovina (AFBiH). The third section situates the activities of the MTT Project within the broader process of weapons and ammunition LCM in BiH. A conclusion briefly discusses lessons learned and ways forward. 📖

Stockpile management capacity building in post-conflict settings: experiences from BiH

The post-war control and management of weapons and ammunition stockpiles in BiH

The General Framework Agreement for Peace in Bosnia and Herzegovina (Dayton Agreement) of 14 December 1995 ended the civil war that had begun in 1992 (UNSC, 1995). The Dayton Agreement divided the country into two entities: the Federation of Bosnia and Herzegovina (FBiH) and Republika Srpska (RS), and the autonomous Brcko District (art. III and Annex 2). The agreement also called for the creation of two armed forces, each with an allegiance to one of the entities: the Army of the Federation of Bosnia and Herzegovina (Vojska Federacije Bosne i Hercegovine, VF BiH)² and Army of Republika Srpska (Vojska Republike Srpske, VRS).

The NATO-led multinational Implementation Force (IFOR), which was in place from 1995 to 1996, and its successor, the Stabilization Force (SFOR), which operated from 1996 to 2004 (UNSC, 1996), were given the executive mandate to ensure compliance with the military aspects of the Dayton Agreement and to create a safe and secure environment in BiH (UNSC, 1995, Annexes 1-A and 2). Both IFOR and SFOR took preliminary steps to establish national armed forces for BiH. Among other actions taken, they deprived the Bosnian, Croatian, and Serbian political representatives of their control over weapons and ammunition by ensuring that such materiel remained within the cease-fire zone and other designated areas (UNSC, 1995, Annex 1-A). In 2004 EUFOR Operation ALTHEA replaced the NATO-led SFOR and took over the executive mandate to oversee the military implementation of the Dayton Agreement (UNSC, 2004).

One of the principal objectives of the various multinational stabilization forces in BiH was to prevent the unauthorized use and illicit transfers of weapons and ammunition by ‘establishing lasting security and arms control measures [. . .] which aim to promote a permanent reconciliation’ (UNSC, 1995,

Annex 1-A, art. I). Consequently, these forces focused only on the record keeping and supervision of the overall stockpiles. These activities included a detailed inventory, which would result in a ‘baseline quantity’ of weapons and ammunition held by the entity armies at the end of the conflict. Yet this quantitative data was not complemented with qualitative assessments of stockpiles (such as ammunition surveillance, which provides an indication of the condition of the ammunition), nor were the entity armies encouraged to implement such assessments. Consequently, data related to the stability and condition of stockpiled weapons and ammunition—which is fundamental to the establishment of an LCM system—was not recorded immediately after the war.³

Accordingly, when the State Law on Defence of BiH (2006) merged the two entity armies to form the AFBiH,⁴ only some quantitative information regarding weapons and ammunition stockpiles was available (BiH, 2005). The lack of qualitative information is particularly problematic in light of the fact that in 2006 substantial parts of the ammunition stockpiles were war-damaged, were inadequately stocked, or had become obsolete. Under such conditions propellant (especially in large-calibre ammunition) is inclined to degrade, with a high risk of self-ignition potentially resulting in catastrophic detonations of whole ammunition storage sites (ASSs) (UNODA, 2015b, p. 10).

According to the Small Arms Survey’s *Unplanned Explosions at Munitions Sites (UEMS) Database*, three explosions at ASSs were recorded in BiH since the start of the data collection period in 1979 (see Table 1). While the exact cause of all three explosions remains unknown, available information indicates that the incident at Rudo was related to negligence during the handling of

Table 1 UEMS incidents in BiH, 1979–2015*

Date	Location	Owner/manager	Deaths	Injuries
6.10.1999	Rudo	State (military)	3	0
--.2000	Bihac	State (military)	N/A	N/A
20.06.2003	Rabic	State (military)	2	0

Note: ‘N/A’ means that data is either unavailable or unrecorded. En dashes (–) in dates indicate that precise dates are unavailable.

Source: UEMS Database (n.d.)

ammunition. That being said, international PSSM experts working in BiH have stated that the dire state of ammunition, combined with improper ammunition handling, storage, and management safety and security standards and practice, created the conditions for the explosions to occur (UEMS Database, n.d.).

In the ten years since the formation of the AFBiH the country has not experienced an unplanned explosion. Yet the international community and local authorities continue to recognize that ammunition stockpiles still pose substantial risks to military personnel, the civilian population, and the environment (for instance, see EWG, 2010). While the risk of unplanned explosions can never be fully eliminated (UNODA, 2015a, p. 4), the possibility that they will occur can be mitigated by increasing the AFBiH's capacity to implement effective PSSM practices and sustainable ammunition LCM. Hence, PSSM capacity building became an integral part of the transfer of responsibility for the weapons and ammunition storage sites from the international stabilization forces to the BiH government.

EUFOR Operation ALTHEA: focusing on capacity building and training

The formation of the AFBiH in 2006 signalled that there was no serious threat to the security situation in BiH, and implied that the national authorities were increasingly taking responsibility for security and stability in the country (Knauer, 2011, pp. 10–11). Nevertheless, at the time of the formation of the AFBiH in 2006 much of the technical knowledge and capability needed for effective weapons and ammunition management had been lost. The restructuring of the AFBiH inadvertently meant that most of the technical personnel trained in demilitarization, stockpile maintenance, and security had moved to other parts of the armed forces, retired, or found employment in the private sector. The remaining staff had little experience of international standards and best practices for weapons and ammunition management and demilitarization. In addition, there was a lack of a unified and well-developed system of training and education in the field of weapons and ammunition management (AFBiH, 2015, slide 8).

Despite the establishment of the AFBiH, EUFOR Operation ALTHEA continued to carry out its executive mandate albeit with a considerably smaller force. The reduction in force size and structure inevitably impacted its ability to carry out its activities on the ground (Knauer, 2011, p. 11). Combined with the lack of technical expertise in the AFBiH, the Council of the European Union decision of 25 January 2010 complemented EUFOR Operation ALTHEA's executive mandate with a 'non-executive mandate' to provide capacity-building and training support to the AFBiH (CEU, 2010, p. 12, Box 2).

In order to fulfil these tasks, EUFOR established a number of specialized multinational teams, including embedded advisory, mobile training, and mobile monitoring teams (EUFOR, n.d.). The mobile training teams in particular were tasked with improving the AFBiH's capabilities: with a complement of approximately 100 military personnel from 11 contributing nations. In 2014 and 2015 the teams implemented about 10 different so-called 'Force Elements' (areas of training) throughout the country.

Box 2 Changing focus: operational mandates for EUFOR ALTHEA

International stabilization missions are usually characterized by a mandate stemming from the UN Security Council or regional organization mandates (such as from the Council of the European Union), which stipulate the scope of their authority and activities in a post-conflict environment. A distinction is often made between executive and non-executive mandates: the former relates to the authority to intervene forcefully, and the latter to assistance offered to the nation state (Emerson and Gross, 2007, p. 9).

EUFOR ALTHEA has a two-pronged mandate (EUFOR, 2015):

- UN Security Council Resolution 1575 (2004) established the executive mandate of EUFOR ALTHEA to oversee the implementation of Annexes 1-A and 2 of the Dayton Agreement. In this capacity EUFOR ALTHEA undertakes the main peace stabilization role to ensure the parties' compliance with the peace agreement, and thus has the authority to maintain (through all means necessary, including the use of force) a safe and secure environment in the country. The executive mandate has been renewed each year,⁵ with UN Security Council Resolution 2247 (2015) continuing it until November 2016 (UNSC, 2015b).
- In 2010 the Council of the European Union reconfigured the focus of EUFOR ALTHEA to include a non-executive mandate dealing with capacity building and training for the AFBiH (CEU, 2010, p. 12). The most important shift in the focus of EUFOR ALTHEA in BiH is that the non-executive mandate essentially added a security sector reform dimension to the operation, increasing the BiH authorities' role in providing security in the country (Knauer, 2011, p. 12; EUFOR, 2015).

The MTT Project: inception and mandate

Officially set up in December 2010, the MTT Project is responsible for capacity building and training for staff at ammunition, weapons, and explosives storage sites. Led by Switzerland and implemented in coordination with Austria and Sweden, the overall aim of the project is to facilitate the development of expertise and capability regarding weapons and ammunition storage site management, safety, and security in the AFBiH through a train-the-trainer approach (SAF, 2011 p. 4; 2012, pp. 4–5).

The MTT Project has three main components:

- providing needs-based, tailor-made modular training to ASS and weapons storage site personnel and specialists from the logistics organization and selected units of the AFBiH;
- coordinating equipment donations from MTT-participating nations and international partners in support of PSSM capacity-building and training efforts; and
- providing advice to the BIH MoD, AFBiH, and EUFOR on relevant normative and structural adjustments to support sustainable stockpile management.⁶



A participant is trained in firefighting skills during an Ammunition Transportation Safety Course held at Rajlovac, Sarajevo, Bosnia and Herzegovina, mid-2014.

The MTT Project is based on the assumption that efficient and sustainable capacity-building training will improve PSSM knowledge, attitudes, and practices in the AFBiH, but will also contribute to human security at the local, national, and even regional levels (SAF, 2011, p. 4). In addition to increasing the AFBiH's capacity to implement effective PSSM practices, training will also contribute to the establishment of safety programmes for weapons and ammunition, and strengthen management and supervision procedures. Such a programme will mitigate the effects and probability of UEMS and reduce the potential for the illicit proliferation of conventional weapons and ammunition (SAF, 2011, p. 4).

Sustainable capacity building and training do not constitute a short-term endeavour. The time frame to achieve the project's objectives was originally assessed to be three to five years (SAF, 2011, p. 4). In response to the project's progress—in terms of continued needs, rates of transfer of courses, and uptake of knowledge—members of the MTT Project have estimated that it will continue until at least 2019. In terms of the actual activities carried out by the project, there is a clear division of tasks among troop-contributing nations according to their national expertise. Switzerland, for instance, takes the lead on matters pertaining to the physical security, management, and transport of weapons and ammunition. Austria provides expertise and training at various levels of ammunition management techniques. Sweden is supporting Austria in ammunition training and mainly focuses on the creation of ammunition guides, including the respective know-how transfer to the AFBiH (see Tables 2 and 3).

Following the initialization of the MTT Project in 2010, two training courses were immediately offered to the AFBiH: the Theoretical Basic Ammunition Techniques Course and the Basic Physical Security Course. Both of these courses were used to evaluate the general awareness of AFBiH personnel and benchmark the MTT Project's 3M training concept (discussed in more detail below). Between 2011 and 2014 the project delivered ten courses consisting of about 28 training modules in total. Table 2 lists the courses and highlights which MTT troop-contributing nation took the lead in organizing them. By the end of 2015 all of the basic training courses provided so far by the MTT Project were

completed and ‘handed over’ to the BiH authorities (that is, integrated into the formal education and training cell in the AFBiH TRADOC).

For 2016–17 the MTT Project has planned to present another 12 courses to the AFBiH, with the latter expected to integrate a further five modules into the TRADOC AWE training cell. The incorporation of these modules into the TRADOC curriculum illustrates the transfer of knowledge and capacity from MTT experts to the AFBiH, as well as BiH’s takeover of responsibility and authority. For example, the third iteration of the training module for AFBiH

Table 2 MTT-organized courses handed over to the AFBiH up to the end of 2015

Course	MTT lead nation	Incorporation into TRADOC
Basic Physical Security Course (BPSC)	Switzerland	2014
Theoretical Basic Ammunition Techniques Course (TBATC)	Austria	2014
Practical Basic Ammunition Techniques Course (PBATC)	Austria	2014
Ammunition Transportation Security Course (ATSC)	Switzerland	Ongoing
Advanced Ammunition Course, Theoretical and Practical (with a focus on the chemical analysis of gunpowder)	Austria	2015 (postponed)
Warehouse Management Weapons and Ammunition (instructors’ course)	Austria	Ongoing
Accord Dangerous Route (ADR) Course, Module I	Switzerland	Ongoing
Ammunition Inspection Experts’ Course (control technical personnel; visual surveillance of ammunition and explosive ordnance disposal)	Austria	Ongoing
Forklift Operators’ Course (driver and maintenance training)	Switzerland	Ongoing
Stocktaking of Ammunition Course (record-keeping and inventory management course)	Sweden; Switzerland	Ongoing

Source: EUFOR (2014, pp. 21–22); AFBiH (2016, pp. 9–12)

Table 3 Activities in support of MTT-organized courses

Activity	MTT lead nation	Partners
Training and coaching provided to AWE Task Force	Switzerland	BiH
Development of ammunition and logistics training cell (in TRADOC)	Switzerland, Austria	BiH
Development of ammunition surveillance procedures	Switzerland, Austria	BiH
Ammunition control technical personnel	Switzerland, Austria	BiH
Development of course material pool	Switzerland	BiH, NATO HQ Sarajevo
Support for the development of the Accord Dangerous Route (ADR) Course and certification	Switzerland	BiH
Coaching on the reorganization of ammunition and weapons storage sites	Switzerland, Austria	BiH
Support for the development of a chemical analysis laboratory for ammunition	Switzerland, Austria	BiH
Advice on record keeping and inventory management	Switzerland, Austria	NATO
Guidelines for ammunition management in BiH	Sweden	BiH, Austria, Switzerland, EUFOR

Source: EUFOR SAWAD (2014, p. 14)

control technical personnel (that is, ammunition inspectors) supports the AFBiH in its efforts to compile a ‘100 per cent inventory’ (which is a qualitative and quantitative inspection of ammunition stockpiles being carried out at 12 ASSs across the country).

In order to foster the success of sustainable PSSM capacity building and training, MTT Project personnel also carry out activities in a number of domains that support the disposal and destruction of surplus stockpiles and the establishment of an LCM system in BiH (EUFOR SAWAD, 2014, slide 9; see Table 3).

- **Strategic-political level:** the MTT Project provides advice on the development of normative frameworks and standard operating procedures (SOPs)

for the control of AWE stockpiles, in accordance with international norms and standards.

- **Operational level:** the MTT Project provides advice and facilitates the development of structures and processes for training and building the capacity of the AFBiH; it also assists in assessing and evaluating the AFBiH's capacities to carry out activities.
- **Tactical level:** in addition to training, the MTT Project troop-contributing nations provide donations (such as forklifts) to strengthen the AFBiH's infrastructure and equipment capacities.

These activities call for a high degree of coordination with partners in the country such as the BiH MoD, NATO HQ Sarajevo, the Organization for Security and Co-operation in Europe (OSCE), and the UN Development Fund (UNDP) BiH. The activities also facilitate the transfer responsibility for MTT Project-organized courses to the AFBiH, and foster the establishment of normative frameworks and related regulations for future training course, PSSM activities, and an overall education and training programme in the AFBiH. As discussed below, the high degree of integration of MTT-designed courses and support structures into the AFBiH's structures and educational programme is a clear indication of the success of the MTT Project.

At the time of writing, about 520 personnel had been trained by (or with the support of) the MTT Project (AFBiH, 2016, p. 22; also see Table 5). All the personnel who have completed MTT Project training programmes (Tables 2 and 5) are now engaged in related tasks. In particular, they include the following:

- **Instructors.** On the MTT Project's recommendation some of the trained trainers were integrated into the TRADOC AWE training cell. In their new position these experts are responsible for the organization of the modules and their further development. Furthermore, they have to ensure that course subjects and new procedures are embedded in the relevant doctrinal principles. Although the integration of officers and non-commissioned officers into the AWE training cell is a temporary measure and limited to one year, the MoD is considering making these permanent positions.
- **Technical inspectors.** Personnel who completed the Ammunition Inspection Experts (control technical personnel) Course for the technical control and

inspection of ammunition are now engaged in the '100 per cent inventory' of ammunition.

- Personnel who completed the course on **testing the chemical stability of gunpowder**, which forms part of the Practical Ammunition Techniques Course, will be engaged in the testing of ammunition at an ASS. 

MTT Project: a comprehensive approach to capacity building

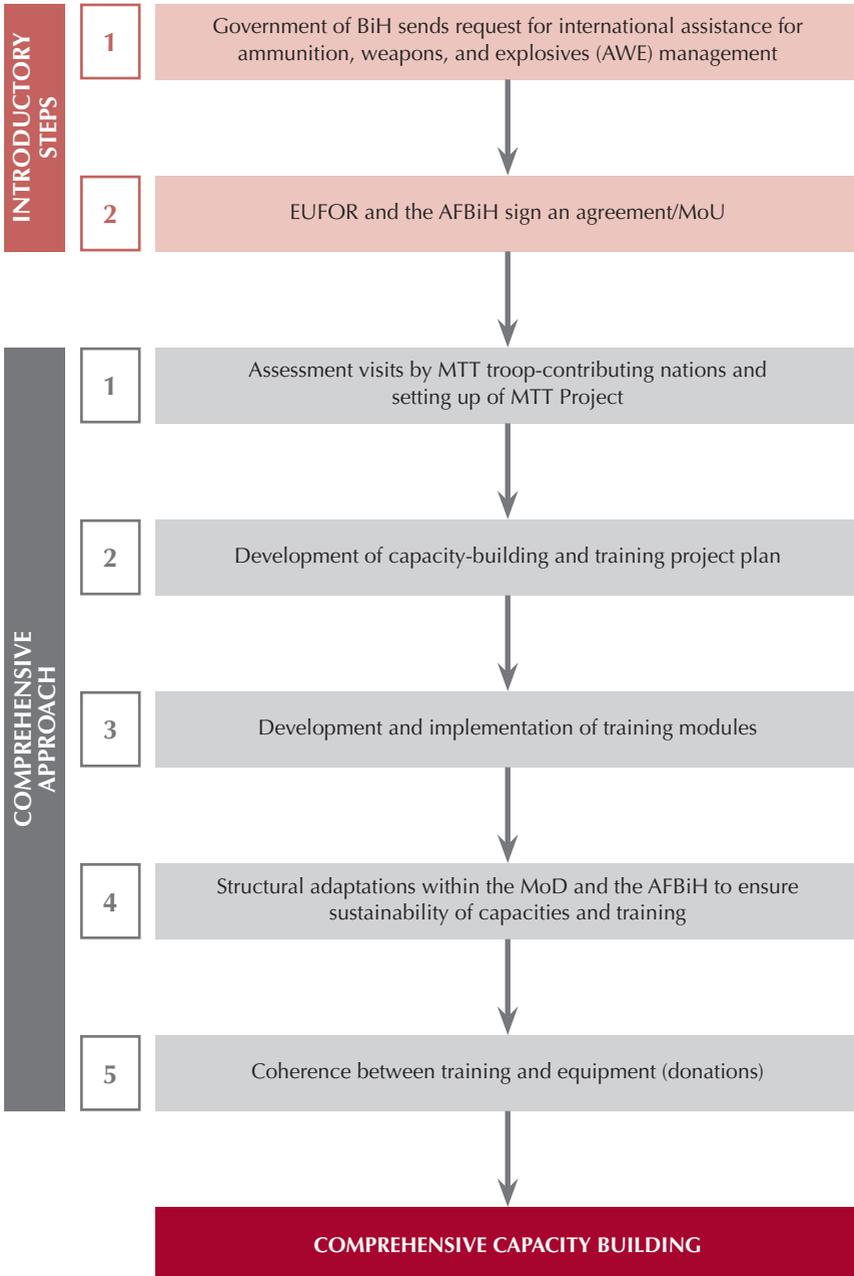
Stockpile management stakeholders increasingly understand that training is not a stand-alone solution. Instead, it should be integrated into comprehensive capacity-building programmes that aim at long-term ownership, organizational reform, and the integration of international standards into existing national legislation, policy, and practices by host nation armed forces. Building sustainable competencies also requires the inclusion of key actors at *all* levels of the MoD and the armed forces (technical, tactical, operational, and strategic) in the decision-making process related to the development and implementation of stockpile management programmes and initiatives. This allows for the development and successful implementation of norms and procedures that allow for a continuation of knowledge, competencies, and skills in the armed forces.

Figure 1 highlights the seven key aspects of the comprehensive approach to sustainable capacity building that the MTT Project developed and implemented in BiH. Although portrayed as distinct components of the comprehensive approach, the six aspects continuously overlap and inform one another.

Conducting assessment visits

Inherent to the MTT Project is the notion that capacity-building and training initiatives should be context specific, that is, designed in light of local political, social, and economic dynamics, and sensitive to the actual competencies and needs of the recipients (SAF, 2011, p. 4). In practice this means that even before a capacity-building and training programme is designed, an in-country assessment should be carried out. This not only ensures that the subsequent training programme reflects the needs of the armed forces in question, but also facilitates political buy-in from the senior leadership of the host nation, the MoD, and armed forces. This is essential to the ultimate success of sustainable capacity building.

Figure 1 **A comprehensive approach to sustainable capacity building**



Assessment visits in BiH began in August 2010, when the EUFOR operational commander approached the Swiss and Austrian armed forces with a request for expertise in forming a specialized MTT Project for PSSM capacity building and training. In order to take stock of the AFBiH's technical capabilities and the condition of storage sites and stockpiles, ammunition experts from the Swiss and Austrian armed forces conducted a number of systematic in-country assessment visits (SAF, 2012, p. 4). The assessment team visited seven sites, including six ASSs across BiH (Gabela, Grabez, Jahorinski Potok, Mrkonjic Grad, Kozlovac, and Krupa) and the demilitarization site in Doboj. The assessment findings documented a series of PSSM, infrastructure, and personnel challenges and shortcomings (see Box 3).

Based on these findings (and after bilateral talks with the BiH MoD, AFBiH, and international partners), the assessment team established a plan for PSSM capacity building and training. The plan was designed in consecutive phases, addressed stakeholders at all levels of the AFBiH and BiH MoD, and defined potential exit points. In December 2010 the EUFOR operations commander, the

Box 3 Findings of initial assessment visits, 2010

- The presence of roughly 25,000 tonnes of surplus ammunition and 80,000 small arms and light weapons
- Lack of systemic real asset visibility (in terms of quantity and quality of ammunition and weapons)
- Disposal process subject to political influence
- Limited disposal capabilities
- Limited PSSM expertise
- No ammunition surveillance capabilities
- Dangerously over-stacked ASSs
- Inadequate safety distances between individual explosive storehouses (ESHs) and storage sites
- Inadequate safety distances between storage sites and civilian infrastructure
- Outdated or inadequate storage site infrastructure and equipment
- Limited personnel and availability
- No or outdated normative framework and SOPs
- No or outdated capability for transporting dangerous goods
- Long and inefficient decision-making processes
- Lack of communication among layers of leadership
- No dedicated ammunition management training
- Outsourced, insufficient, and expensive ammunition inspection training
- Lack of planning for future AFBiH force development
- Multiple but poorly coordinated initiatives by the international community with little local ownership

Source: SAF (2012, pp. 25–26); EUFOR SAWAD (2014, pp. 3–6)

EUFOR ALTHEA commander, and the AFBiH Joint Staff approved the plan. The findings and project plan were presented at the first High-level National Small Arms and Light Weapons Conference in May 2011 to the BiH minister of defence, the AFBiH chief of Joint Staff, and the heads of multinational partners.⁷

The ‘capacity-building and training’ project plan

In order to ensure maximum uptake of knowledge and buy-in from the local authorities, sustainable capacity building and training require sound planning and progressive implementation. The MTT Project was designed to be implemented in four phases: one evaluative and three operational phases (SAF, 2011, pp. 5–8). Each phase is tailored to a particular audience, defines the roles of key implementing actors, and is accompanied by MTT engagement at the politico-military level.

Phase 0. This phase involved the selection, evaluation, and validation period of the assessment visits. During this period the MTT Project was not officially operational in BiH. As mentioned previously, the aim was to identify BiH’s capacities and needs, as well as entry points for the MTT Project. This allowed troop-contributing nations to estimate the likely duration of their engagement and the resources that would be needed. In addition, the phase involved the preparation of tailored, needs-based training modules.

Phase 1. This phase aimed to create a minimum level of capacity for the security and management of weapons and ammunition storage sites for basic-level personnel (journeymen) across the various levels of the MoD and AFBiH. In cooperation with the MoD and the BiH Joint Staff, the MTT Project developed a training agenda, supported the selection of AFBiH personnel for training, and decided on their allocation to particular modules:

- **Infantry personnel** were assigned to modules that would allow them to acquire the knowledge and ability needed to implement basic physical security practices in accordance with international best practices (such as the International Ammunition Technical Guidelines (IATG)) and international law (such as proportionality in the use of force by guard and intervention personnel).

- **On-site logistics personnel** participated in courses that provided basic stockpile management training, also according to international standards. The minimal, standardized training given such personnel qualified them for advanced and progressive training offered in the next phases of the project.
- **Personnel from the logistics organization** (especially those assigned to ammunition technical posts) were given standardized basic ammunition training that prepared them for advanced training offered in phase 2.

Phase 2. This phase was designed to progressively foster specialization in the AFBiH by providing advanced training modules on specific topics for designated site commanders, selected site personnel, and specialists of the logistics organization (especially supervisors and managers). In BiH, this phase included the further delivery of tailor-made training for designated personnel, enabling them to acquire the specific skills needed to organize and manage the PSSM process:

- **Infantry personnel** continued their training regarding physical security, focusing on issues such as risk and threat education, infrastructure requirements for physical security, intrusion detection systems, and stockpile management.
- **On-site logistics personnel** were given additional training on stockpile management, including on advanced ammunition techniques, risk education, prospective explosives site and explosives site planning, ammunition logistics, emergency action and response, and on-site documentation and information collection.
- **Supervisors and managers from the logistics organization** attended courses on ammunition surveillance, ammunition transport and safety, risk assessment, and data management, and international ammunition standards. The aim was to ensure that logistics organization personnel have the knowledge and skills to develop and oversee the implementation of all stockpile management procedures at both the organization level of the AFBiH (including surveillance, transportation, risk assessment, and data management) and the tactical level (that is, for on-site personnel).

Following a train-the-trainer approach, in these courses logistics personnel are also given the skills that will allow them to transfer their knowledge and

otherwise facilitate professional personnel development in the armed forces. As explained below in greater detail, they will have the capacity to provide routine training to on-site personnel. To ensure the uptake and sustainability of knowledge, training initiatives need to be accompanied by institutional change. Thus, during this phase the MTT Project also provided advice and technical support to the MoD and Joint Staff for the development of relevant SOPs.

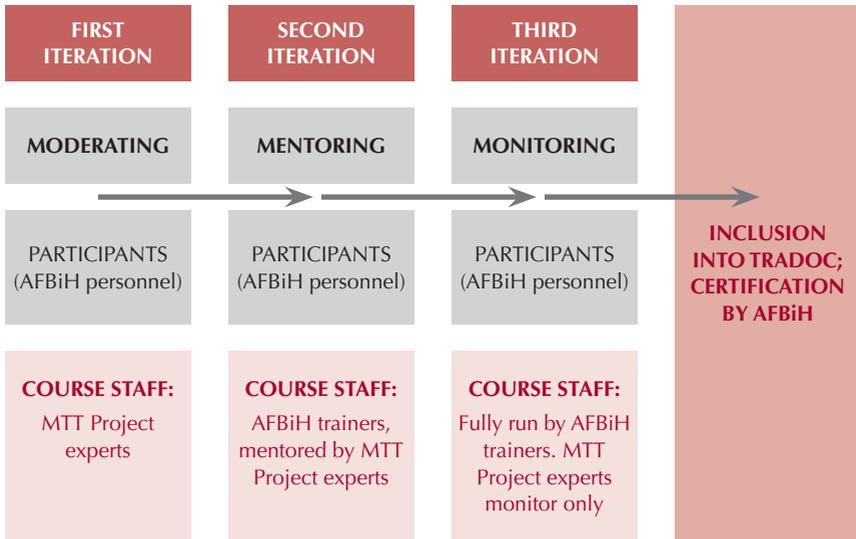
Phase 3. This phase was designed to consolidate the LCM capabilities of the AFBiH. It continued the specialization process by providing advanced courses on such topics as destruction, disposal, and surveillance capability. By late 2015 this phase had only been partially implemented, since the workshops and training modules that will be offered during this phase require a number of SOPs to be put in place—especially for surplus identification, safety procedures, ammunition surveillance, and the identification of obsolete or expired ammunition.

Progression from one phase to another is dependent on the achievement of phase-specific deliverables, and may be characterized by specific exit points for the MTT Project troop-contributing nations and the BiH authorities. At the end of each phase a high-level conference is organized in order to present relevant progress and determine capacity-building and training priorities and next steps for the MTT Project. In 2013 these conferences were replaced by national and international coordination bodies (see below, ‘Coordinating national and international stakeholders’).

Training-the-trainers: building organizational capacity through modular courses

In line with the EUFOR Capacity Building Training Guidelines, the MTT Project adopts a ‘train-the-trainer’ approach. This approach aims to foster continued professional development at the operational level of the AFBiH, in line with international standards and best practices (SAF, 2011, p. 8). Pursuant to this strategy, each course is divided into three distinct modules or iterations: moderating, mentoring, and monitoring (3M; see Figure 2) (SAF, 2012, p. 6). While the MTT Project does not certify participants after the completion of a

Figure 2 **Train-the-trainer approach**
(3M Model: moderating, mentoring, monitoring)



Source: SAF (2012, p. 6); EUFOR SAWAD (2015, p. 19)

course, informal assessments are made and communicated to the BiH authorities. Course participants are awarded a national (official) certification only when a course is under the full authority and control of the AFBiH.

Moderating: During the first iteration, course staff are composed of experts from the MTT Project. The iteration primarily involves moderation (or facilitation) by MTT Project experts, who plan, organize, and conduct the training, and assess the AFBiH participants. During this iteration the presentations and training materials are provided to the BiH authorities for review and adopted to the needs of the AFBiH. Together with the host nation, the most promising participants are selected for specialized training in subsequent stages with the aim of qualifying them as trainers.

Mentoring: During the second iteration, course staff are composed of both MTT experts and AFBiH personnel. The aim is to continue the professional development of potential trainers through MTT expert mentoring; the AFBiH trainers prepare the training module together with experts from the MTT Project,

and are then responsible for the delivery of particular training sessions. The MTT experts also sensitize the AFBiH trainers to effective didactic methodologies. This process consists of two steps. In the first step, MTT experts facilitate the module by presenting the technical material and providing detailed instructions on how to effectively communicate and transfer knowledge to course participants. In the second step the AFBiH trainers deliver the training module to new participants, while the MTT experts observe and provide mentoring support.

Monitoring: The third iteration aims at consolidating the development and transfer of skills to host-nation armed forces. Modules provided during this phase are fully organized and staffed by AFBiH personnel, who are responsible for all administrative, organizational, logistical, and content-related activities. AFBiH trainers are free to further develop the course modules, but are encouraged to ensure that these modules follow international standards. During the



AFBiH personnel are trained in ammunition marking and palletization techniques and monitored by MTT Project experts, ASS Krupa-Hadzici, Bosnia and Herzegovina, mid-2013.

third iteration MTT experts play only a monitoring role, providing feedback to the trainers and the unit in charge at the end of each module or course.

At the end of the third iteration the courses are recommended for formal integration into the AFBiH TRADOC training curriculum. TRADOC then decides on any further iterations of a course and is responsible for establishing the related regulations and procedures for the course. If the expected outcome is not reached—that is, if armed forces personnel are not able to perform all the necessary tasks by the third iteration—one or more of the iterations, or a whole course, might be repeated. Once a course is incorporated into TRADOC, MTT experts can support further iterations with expert advice (SAF, 2012, p. 6).

Structural adaptations for host nations

Long-term and sustainable PSSM capacity building and training require the progressive integration of MTT-designed courses into the host country's national training curriculum and doctrine. In order to achieve this in BiH, the MTT Project works closely with the MoD and AFBiH Joint Staff to ensure that PSSM knowledge, once acquired, reflects local capacities and needs, and is maintained through AFBiH procedures and organizational structures.

Since 2013 the training courses and modules developed by the MTT have been increasingly integrated into the TRADOC training structures and AFBiH training curriculum. To this effect, on the advice of the MTT Project (with the support of EUFOR and the three troop-contributing nations), the BiH MoD and Joint Staff established an ammunition-training cell⁸ in TRADOC on 1 May 2014. The cell is tasked with developing and organizing AFBiH ammunition storage and management training modules. Table 4 provides an overview of the courses offered by the MTT Project and TRADOC in the AFBiH from 2011 to 2015 (AFBiH, 2015, slide 21; 2016, slides 9–10).

The ammunition-training cell also oversees strategic personnel planning. In order to facilitate such planning, the AFBiH, in cooperation with the MTT Project, developed the AWE Personnel Management and Development Matrix. This matrix systematically administers data from the student tracking sheets, allowing information on students and instructors to be easily available, and to be fed into personnel planning activities and the determination of the structural adaptations needed in the AFBiH.

Table 4 MTT Project and TRADOC courses, 2011–15

Course title	Course leaders	Time	Number of participants	Total
Practical Basic Ammunition Techniques Course (PBATC)	MTT (Austria)–TRADOC	2011–13	45	70
	TRADOC	2014–15	25	
Theoretical Basic Ammunition Techniques Course (TBAC)	MTT (Austria)–TRADOC	2011–13	45	68
	TRADOC	2014–15	23	
Advanced Ammunition Course, Theoretical and Practical (chemical analysis of gunpowder)	MTT (Austria)–TRADOC	2011–14	33	33
	TRADOC	2015	Postponed*	
Warehouse Management Weapons and Ammunition (instructors’ course)	MTT (Austria)–TRADOC	2013	10	10
Ammunition Inspection Experts Course (control technical personnel; visual surveillance of ammunition and explosive ordnance disposal)	MTT (Austria)–TRADOC	2014–15	17	24
	MTT (Austria)–TRADOC	2015	7	
Ammunition Transportation Security Course (ATSC)	MTT (Switzerland)–TRADOC	2012–15	86	86
Basic Physical Security Course (BPSC)	MTT (Switzerland)–TRADOC	2011–13	70	98
	TRADOC	2014–15	28	
Forklift Operators’ Course	MTT (Switzerland)–TRADOC	2014–15	58	58
Accord Dangerous Route (ADR) Course, Module I	MTT Switzerland–TRADOC	2015	21	44
	MTT (Switzerland)–TRADOC	2015	23	
Stocktaking of Ammunition Course	MTT (Sweden)–TRADOC	2011	33	33
Total				524

* Course not completed in 2015 due to lack of resources.

Source: AFBiH (2016, pp. 9–12)

Coherence between training and equipment

The MTT Project's experience in BiH has highlighted the need for international assistance for capacity building for storage site management to go beyond training and include the donation of technical equipment and opportunities for skills development in terms of the related operation and maintenance of equipment (that is, train-and-equip programmes). The MTT Project troop-contributing nations have donated equipment to the AFBiH in order to ensure that the technical knowledge acquired during the training phases can be sustainably applied in BiH.

For instance, Austria has provided several mobile field-testing kits to measure the amount of stabilizer in propellants. These kits are used both in the ammunition expert courses and for technical controls of AFBiH ASSs (BiH MoD, 2014). They are complemented by ammunition guides (developed and donated by Swedish experts in cooperation with the AFBiH), which are used in inventory management and record-keeping training. Switzerland has donated forklifts and fire-fighting and maintenance material. This equipment is routinely used for regular activities at the storage sites and in the physical security and transport safety courses.

All donations of equipment are supported with complementary training, including in ammunition testing in Austria and in forklift maintenance in Switzerland. Over the long run the MTT Project encourages the host nation to ensure that national procurement planning takes into account the need to match PSSM tasks with appropriate equipment. 

A holistic approach to weapons and ammunition LCM

From its inception the MTT Project was seen as one piece of a bigger puzzle aimed at fostering sustainable LCM in BiH. Often termed the ‘holistic approach’, the aim is to ensure that the different dimensions of LCM, including activities carried out by the host nation and other bilateral and international stakeholders, are effectively coordinated.

The following section elaborates on the organizational requirements of the holistic approach followed in BiH and highlights the role of the MTT Project in this approach, namely: coordinating national and international stakeholders, fostering host-nation ownership of the LCM process, facilitating ammunition inventory and surveillance, and surplus disposal.

Coordinating national and international stakeholders

In many post-conflict settings national authorities lack the finances or capability to deal with their weapons and ammunition surpluses and implement sustainable LCM (Gobinet and Carapic, 2015). In such situations the international community often provides financial support and technical advice. Yet for such assistance to be effective a high degree of coordination is necessary among the various international stakeholders.

In BiH, LCM-related programmes and initiatives implemented by the international community are coordinated through an ‘Ammunition, Weapons, and Explosives Master Plan’ (AWE Master Plan). The origins of the plan can be traced back to 2012, when a review of the Dayton Agreement took place to determine residual military tasks to be completed by the EUFOR. The review found that the issue of ammunition, weapons, and explosive management still needed to be addressed; the matter thus became a priority in BiH. As a result, and under EUFOR leadership, the AFBiH developed the AWE Master Plan (EUFOR SAWAD, 2014).

The AWE Master Plan stipulated both the desired end state in BiH and the principal means of achieving it: ‘the transparent disposal of surpluses and the introduction of a sustainable LCM in BiH’ (Non-paper, n.d.; EUFOR Sa, 2013, p. 3; EUFOR SAWAD, 2014, p. 7). The main principles of the AWE Master Plan include increased ‘local ownership’, a ‘holistic approach’ to weapons and ammunition LCM, and the creation of an organizational structure to implement the plan. The EUFOR operational commander approved the plan in February 2013 (SAF, 2013a, p. 4). Two months later, the BiH MoD approved both the AWE Master Plan and the means of achieving it, thus taking a first step towards establishing ‘local ownership’ (SAF, 2013a; 2013b).

The implementation of the AWE Master Plan called for the establishment of an organizational structure to support LCM, including a Strategic Board; a Coordination Committee; specialized working groups; an information sharing, support, and control point (that is, the AWE Task Force); and the creation of a coordinator position in EUFOR (that is, a special advisor on weapons and ammunition disposal, or SAWAD; see below) (SAF, 2013b, p. 4; OSCE, 2014, p. 33).

The **Strategic Board** was officially established in July 2013. Led by the BiH MoD and the assistant minister for resources, the board is composed of high-level representatives from the MoD and AFBiH and key international organizations. The Strategic Board serves to coordinate the high-level politico-military decision-making process relating to the control and management of AWE. The inherent assumption behind its creation is that sustainable capacity building can only be achieved if it is supported by the concurrent reform of the BiH normative framework and force structure. The board also launched a comprehensive disposal programme for unstable and defective ammunition, as well as weapons systems it no longer planned to retain (non-prospective).

The **Coordination Committee** is the key element in the project management coordination mechanism. Led by the deputy chief of the Joint Staff for resources, the committee is in charge of coordinating, synchronizing, and prioritizing the infrastructure, disposal, and destruction activities of the international community and the AFBiH. It is composed of the project managers from international implementing bodies.

The Coordination Committee oversees three working groups to address inter-related aspects of LCM at particular sites. The working groups include (SAF, 2013b, p. 4):

- **Working Group KRUPA 2017**, which is responsible for developing a standardized normative, personnel, infrastructure, and equipment plan for the ASS in Krupa;
- **Working Group TROM DOBOJ**, which is primarily concerned with the development of a plan to deal with the accumulation of ammunition scrap and residues at the ammunition disposal site in Doboj. The plan takes into account a number of dimensions, including normative, personnel, infrastructure, and equipment aspects of scrap and residue disposal; and,
- **Working Group GLAMOC**, which aims to develop a plan to increase capabilities for open detonation operations at the ‘Barbara’ range in Glamoc. It also seeks to identify potential alternative ranges in BiH.

To coordinate international initiatives the EUFOR operations commander called for the creation of the position of special ammunition and weapons advisor (SAWAD) to the EUFOR commander in April 2013. Since 2013, the head of the MTT Project has occupied the SAWAD position. The SAWAD is therefore responsible both for overseeing the capacity building and training for AWE management, and for the design and implementation of AWE Master Plan activities.

Recognizing that sustainable LCM and the implementation of the AWE Master Plan also depend on the availability of up-to-date and accurate information, the EUFOR operations commander then called for the establishment of the AWE Task Force. Established in April 2014 as a ‘formal and temporary’ organization within the AFBiH Joint Staff and made up of five AFBiH personnel (with support from the MTT Project and other members of the international community), the AWE Task Force supports the AWE Master Plan. It serves as a repository of data on all issues relating to weapons and ammunition site management, including quantities of ammunition destroyed, reporting on results of the ‘100 per cent inventory’, legal precedents, and SOPs related to weapons and ammunition storage site management (AFBiH AWE, 2014).

Perhaps the best illustration of the confluence of AWE Master Plan implementation and effective coordination among international stakeholders is the refurbishment of the Krupa ASS. In consultation with the AFBiH, Working Group KRUPA has been working towards transforming the location into ‘a model site’, with ammunition storage practices, infrastructure, and perimeter maintenance all being brought into line with international standards.

The working group thus ensures that the activities of international partners supplement one another, and that the various organizations work towards the same end state of transforming ASS Krupa into a model site, for instance:

- the OSCE Security Upgrade (SECUP) Project has been responsible for physical infrastructure upgrades at the location, including improvements to fencing and gates, and the installation of intruder detection systems, barriers, and signage.
- the UNDP Explosive Ordnance and Remnants of War (EXPLODE) Project has improved safety at the location by taking the lead in the disposal of ammunition and providing upgrades to ESHs (such as improvements to doors, ceilings, roofs, and ventilation systems).
- the South Eastern and Eastern Europe Clearinghouse for the Control of Small Arms and Light Weapons (SEESAC) has also facilitated the safety aspects of ASS Krupa by providing doors for ESHs;
- NATO HQ Sarajevo has provided financing for the procurement of fire-fighting equipment and maintenance;
- the AFBiH, with the support of the NATO Support and Procurement Agency and the Swiss government, undertook in-perimeter mine clearance; and
- the MTT Project has provided on-site training for appropriate ESH warehousing.

Host-nation ownership of weapons and ammunition LCM

In the course of the development of the holistic approach to weapons and ammunition LCM in BiH it became evident that its success would largely depend on host-nation political will and ownership. Indicators of local ownership in this case include the active participation of the MoD and AFBiH in the development and implementation of the necessary structures, procedures, and norms for effective weapons and ammunition management. While the BiH authorities were always active in the development of the LCM system, they officially took the lead in 2013, when the BiH MoD took over responsibility for the AWE Master Plan, consistent with the plan's principle of 'local ownership'.

During the transfer of responsibility for LCM, the MTT continues to support and advise the MoD and AFBiH. The MTT Project defines the relevant stake-

holders in the AFBiH and asks the government to take the decisions that need to be made in each capacity-building phase. While the MTT Project is responsible for the actual capacity building in each phase, the MoD and AFBiH need to establish the necessary framework to facilitate the project's work. To this end, it was expected that at each phase of the MTT Project described above, the MoD and AFBiH would take a number of concrete steps (SAF, 2012, p. 5).

- **Phase 0** calls for the AFBiH to take responsibility for assessing the country's normative framework and identifying any changes needed to bring it into line with international standards and guidelines. The AFBiH is also responsible for identifying key personnel required for weapons and ammunition storage site management at all levels.
- **Phase 1** requires the AFBiH to engage in weapons and ammunition storage site-related force planning in order to establish an adequate chain of command and define clear areas of responsibility. This phase also calls on the AFBiH to allocate appropriately qualified personnel to the weapons and ammunition PSSM process at all levels, in accordance with international standards.
- In **Phase 2** the AFBiH needs to adopt the necessary directives, regulations, and SOPs for weapons and ammunition PSSM.
- **Phase 3** requires the AFBiH to take responsibility for establishing and maintaining a sustainable LCM system.

Without such politico-military decisions from BiH, the MTT Project's capacity-building and training activities, including their integration into and sustained application in the AFBiH, would be undermined (SAF, 2012, p. 22). If any of the abovementioned government benchmarks are not met, the MTT carries out an assessment of the overall process in consultation with the MoD, AFBiH, and other partners. BiH government actions that might trigger an assessment and also signal a potential 'exit point' for MTT Project troop-contributing nations, as well as the MoD and AFBiH, relate to such things as (SAF, 2012, pp. 22–23):

- decisions on the normative framework and AFBiH force structure;
- decisions on the disposal of non-prospective ammunition and weapons stockpiles;
- decisions regarding the integration of training modules into TRADOC; and
- decisions affecting coordination with other partners.

Depending on the MTT Project’s assessment of these actions, it might suggest repeating, slowing down, or cancelling a particular module.

Facilitating ammunition inventory and surveillance in BiH

Multinational forces (SFOR, IFOR, and EUFOR) and the BiH authorities have traditionally struggled to provide accurate weapons and ammunition stockpile figures for BiH. To date there is no single official stockpile inventory in BiH, but rather several lists and book-keeping systems used by the country’s various stakeholders. Each of the two BiH entities had its own inventory dating from before the 2006 Defence Reform. In addition, there is also a pre-existing Data Access and Retrieval for the Entities inventory from SFOR and EUFOR, a presidentially approved list for disposal, and a financial list based on inventory value (Non-paper, 2012, p. 3). Anecdotal and media reports point to poor accounting and record keeping as an important source of diversion to illicit end users (Remikovic, 2013). Nevertheless, available figures declared by the MoD between 2008 and 2015 indicate a decrease in the AFBiH’s surplus weapons and ammunition stockpile (see Table 5).

Moreover, there is little information on the physical condition and chemical stability of stored ammunition (including propellants). Reliable information has, however, been obtained from the 2010 age-and-risk analysis provided by the Expert Working Group (EWG), and from the preliminary results of the ‘100 per cent inventory’ carried out by the BiH MoD since 2013. In 2010 the EWG carried out an analysis of AFBiH ammunition stocks by age and according to the US Defense Threat Reduction Agency (DTRA) risk categories. The report found that:

Table 5 Conventional ammunition and small arms and light weapons surplus stockpiles declared by the BiH MoD, 2008–15

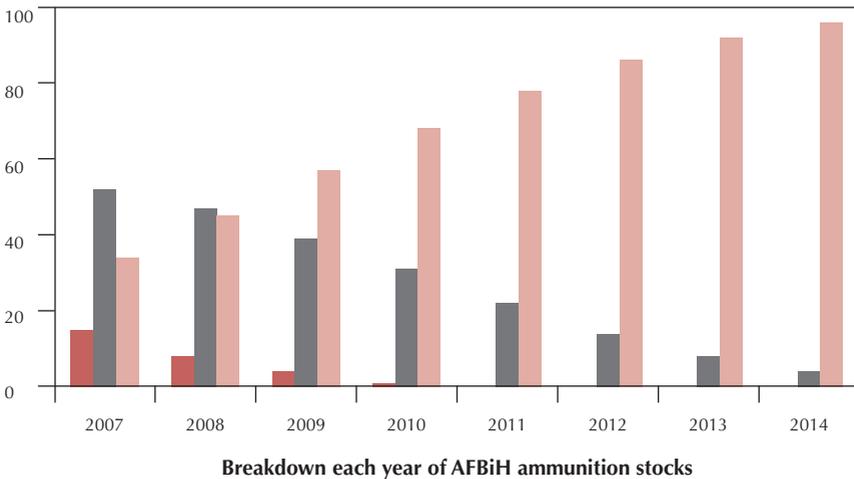
	2008	2009	2010	2011	2012	2013	2014	2015
Ammunition (tonnes)	67,000	25,000	22,500	21,389	18,378	17,522	16,347	14,858
Small arms and light weapons	N/A	100,000	99,882	70,217	40,136	40,136	40,052	40,052

Source: Gobinet and Carapic (2015), p. 130; BiH (2015)

Figure 3 Age and risk analysis of AFBiH ammunition stocks, 2007–14

■ Low <15 years ■ Moderate 15–20 years ■ High >20 years

Percentage each year in DTRA risk category



Source: EWG (2010); Gobinet (2011, p. 53)

- the AFBiH did not stockpile any ‘low-risk’ ammunition;
- 22 per cent of the ammunition could be classified as ‘moderate risk’; and
- between 2013 and 2014 more than 90 per cent of the country’s ammunition was likely to be classified as ‘high risk’ (see Figure 3).

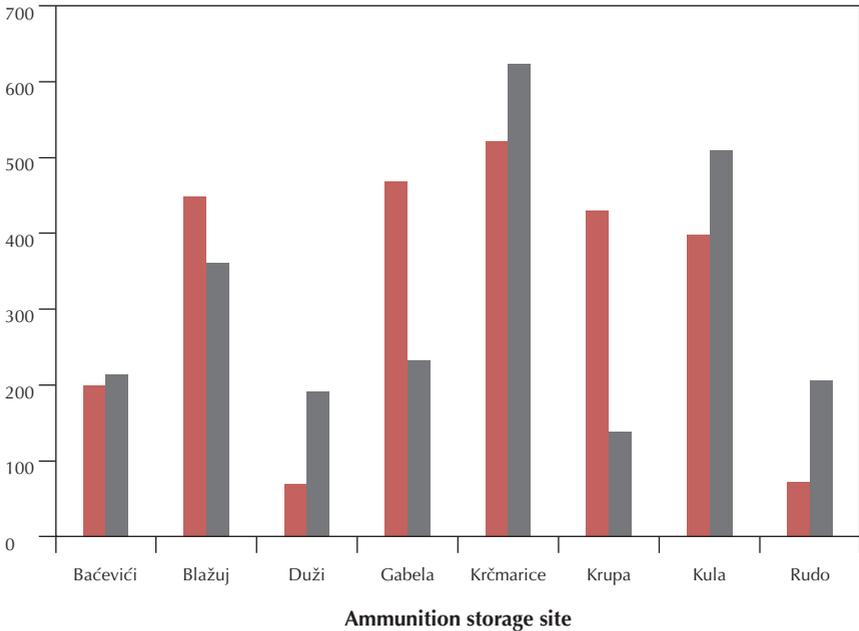
Based on this analysis, the EWG recommended the immediate destruction of a number of weapons and ammunition systems (EWG, 2010; Gobinet, 2011, pp. 59–60).

The highly publicized disappearance of ammunition from AFBiH stockpiles in July 2013 led to the conclusion that the armed forces’ record-keeping and inventory management systems had serious inadequacies (Klix, 2013). Accordingly, the BiH minister of defence ordered a ‘100 per cent inventory’ of all BiH stockpiles (BiH MoD, 2014).⁹ In order to start the process the AFBiH developed the respective operational plan with the support of the MTT Project and other international partners (BiH MoD, 2014). By the end of December 2015 about 9,000 tonnes of ammunition had been visually inspected (BiH, 2015).

Figure 4 AFBiH ammunition inspected in 2015, by weight (tonnes) and location (ASS)

■ Serviceable (tonnes) ■ Unserviceable (tonnes)

Quantity of expected munitions (tonnes)



Source: BiH (2015)

The majority of the inspection was undertaken in 2015,¹⁰ with available data indicating that a considerable volume of ammunition stocks across various storage sites was deemed unserviceable (see Figure 4). These results have led to the destruction of unsafe prospective (originally planned for retention) and non-prospective (surplus planned for disposal) ammunition (see below).

As mentioned previously, the '100 per cent inventory' is only a first step in establishing a sustainable ammunition surveillance system that would allow the AFBiH to keep track not only of the quantity of its stockpiles, but also the quality of the ammunition in these stockpiles. The MTT Project facilitates the establishment of such a surveillance system by training specialists, some of whom are undertaking the 100 per cent ammunition inventory. The project

also helped develop the AFBiH Ammunition Storage Guides. These guides include all prospective ammunition and the corresponding storage data.

A proper surveillance process requires equipment. To this effect, the MTT Project is providing an initial set of field-testing equipment, specifically in the form of Austrian chemical field-testing kits (BiH MoD, 2014). This equipment is designed to allow a rapid assessment of the status of ammunition. It does not, however, permit life-span prediction using such methods as heat-flow calorimetry and is no substitute for systematic surveillance. The MTT Project is currently evaluating the need for a formal steering and coordination mechanism for ammunition surveillance. The establishment of such a mechanism is likely to result in the provision of a testing and analysis capability (a test laboratory).

Surplus disposal

The amount of surplus AWE in BiH has a double impact on the success of EUFOR ALTHEA's non-executive mandate (and the MTT Project more specifically): while the large quantity of ammunition and weapons poses a threat to MTT personnel, AFBiH personnel, and local communities, it also limits the impact of capacity building and training (EUFOR Sa, 2013, p. 2). Thus, one of the priorities of the AWE Master Plan—and a key element of the holistic approach to sustainable stockpile management in general—is the disposal of surplus ammunition through destruction, donation, and sale (see Box 4).

Yet in BiH this issue is politically sensitive (see Box 4). Given such political constraints, the reduction of surpluses has progressed slowly. The process was further impeded by the need for a Presidency decision to authorize destruction and by a lack of both bureaucratic and technical procedures for dealing with particular types of ammunition (BiH MOD, 2011, slides 4 and 5). That said, in 2015 the BiH government, supported by the international community, drafted 'emergency destruction procedures' and developed regulations and SOPs for the destruction of special categories of ammunition, such as 20 mm and white phosphorous munitions and aerial bombs.

BiH's commercial destruction capabilities, which include the Pretis Defence Industry Factory (DIF), Binas DIF, and Vitezit DIF facilities, are not operational. Before restarting their demilitarization lines significant funding, technical

Box 4 Surplus disposal and the Dobož Agreement

BiH's lack of progress in disposing of surplus weapons and ammunition largely stems from a lack of political consensus on the application of the 2008 Dobož Agreement¹¹ and Defence Law (BiH, 2005; 2008; 2009).¹² The agreement, brokered by NATO HQ Sarajevo, transferred the ownership of all movable defence property—including all weapons, ammunition, and explosives—to the BiH MoD. It also outlined a clear institutional framework for surplus disposal. Firstly, it tasked the MoD with preparing inventories of surplus ammunition and weapons for disposal through (in preferential order) sale, donation, and destruction. Secondly, it tasked the MoD with establishing a commission for the implementation of the disposal process following the BiH Presidency's approval of the sale, donation, or destruction of surplus. Thirdly, it established an 80:20 split¹³ of the proceeds from the disposal process, with the lion's share going to the entity from which the profit-generating items originated.

At the end of 2015, the Dobož Agreement's provisions had only been partially implemented. Despite the fact that clear legal and institutional procedures for dealing with surplus weapons and ammunition were spelled out in the agreement, implementing them has proved difficult. In particular, there is no agreement on the ownership of defence property (specifically, movable property that was to have been relocated from entity storage houses to those controlled by the MoD) (Maxwell and Olsen, 2013, p. 65). Many actors have in fact sought to place control of the sales process in entity, rather than state, hands.¹⁴ The MoD's resulting inability to conduct sales of surplus stocks has led to calls for amendments to the Dobož Agreement. Members of the political leadership of the RS and FBiH have argued that if the state is unable to conduct sales, then the entities should do so (Non-paper, 2012, pp. 3–4). The international community, however, maintains that sales should remain at the government level and that the Dobož Agreement has entered fully into force.

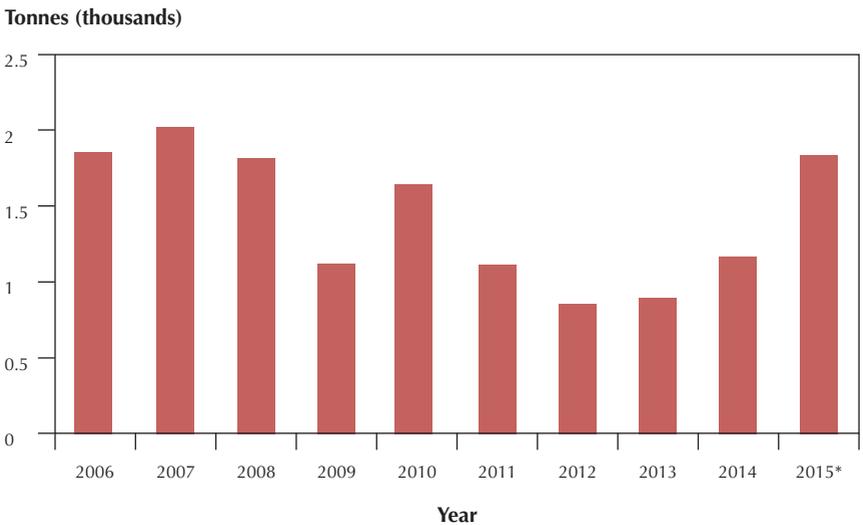
At the end of 2015 approximately 1,600 tonnes of scrap metal remained that the MoD could not sell because of the disagreement over the implementation of the Dobož Agreement.¹⁵ To overcome this deadlock, and acknowledging the international community's position on sales,¹⁶ the MoD decided to launch the 'Arms Trade Treaty Implementation Study' in July 2014. This study, under the auspices of UNDP BiH and the MTT Project, is being carried out by the Small Arms Survey. It is expected to examine the costs and consequences of maintaining current stockpiles of weapons, ammunition, and scrap material, and outline concrete mechanisms for decreasing the volume of surplus stocks. The study will be published in 2016.

assistance, and oversight were needed in order to bring them into line with the commercial demilitarization industry's safety and security standards. In the case of Pretis, the BiH authorities established a specific oversight commission. Initially, commercial destruction also faced political constraints, since all three facilities are located in the FBiH, and RS does not support the disposal

of former VRS military equipment in these facilities. Consequently, destruction capability in BiH remains limited. Despite the financial and technical assistance of the United States (through its implementing agent, Sterling International, which is responsible for open burning/open detonation (OB/OD) activities at the Glamoc destruction range) and UNDP (which financed the equipment for the AFBiH's disposal facility in Trom Dobo), total disposal capability is still below what would have been possible with full implementation.

Specialists estimate that if all six ammunition destruction sites in the country (civilian and military) were fully functional, their total, optimal destruction capacity would be around 6,000 tonnes per year. In reality, the average destruction rate is much lower. BiH's combined OB/OD and industrial disposal facilities have increased the amount of ammunition destroyed. The country reportedly demilitarized approximately 15,000 tonnes of surplus ammunition, mines, and explosives since the formation of the AFBiH in 2006 (see Figure 5).¹⁷ As a result of the progress of the '100 per cent inventory' in 2015, combined efforts have resulted in a significant increase in destruction, with more than 4,570 tonnes being destroyed from 1 January 2013 to 31 December 2015 (BiH, 2015; 2016).

Figure 5 Quantity of ammunition disposed of annually in BiH, 2006–15



* Includes 572 tonnes of ammunition donated to Iraq in the summer of 2015.

Source: BiH (2015; 2016)

While infrastructure refurbishment and ammunition destruction are explicitly excluded from the MTT Project's ambit, the lack of capacity in these fields inevitably hinders capacity-building progress at all other levels of the AFBiH. Hence, in an effort to increase the rate of disposal in BiH, the SAWAD coordinates MTT Project activities with complementary activities implemented by other international actors, including in the areas of infrastructure (OSCE BiH, UNDP BiH, and SEESAC), destruction (US Embassy in Sarajevo, UNDP BiH, and Sterling International), force development (NATO HQ Sarajevo), and training (EUFOR) (EUFOR SAWAD, 2015, slide 20). 

Conclusion: lessons learned and ways forward

Almost six years since its inception the EUFOR 'Weapon and Ammunition Storage Site Management' MTT Project has increased the AFBiH's capacity to maintain sustainable weapons and ammunition stockpiles. Given the multi-level (comprehensive) and cross-dimensional (holistic) nature of ammunition management, as well as the onerous historical and political challenges faced by BiH at the beginning of the project, the undertaking has been exceptionally complex.

Through its comprehensive approach to capacity building and training the MTT Project has worked with various levels of the BiH MoD and AFBiH. As part of the holistic approach to weapons and ammunition LCM, the MTT Project supplemented (and in turn was supported by) complementary PSSM, demilitarization, and infrastructure upgrade activities implemented in BiH by various national and international partners. If this holistic approach is to succeed, all these activities must be effectively coordinated towards a mutually agreed 'desired end state', namely the transparent disposal of surplus stocks and the introduction of sustainable LCM in BiH (EUFOR SAWAD, 2014, p. 7).

The MTT Project in BiH has succeeded in fostering a high degree of national ownership—reflected in the number of training modules integrated into TRADOC, and the development and implementation of normative and structural changes to supplement the MTT's capacity-building efforts. In addition, by coordinating its activities with various other stakeholders in BiH, the MTT Project also supported the '100 per cent inventory' and the increase in surplus stock destruction. Furthermore, the MTT Project has facilitated political buy-in and commitment from BiH authorities that has paved the way for the development of a sustainable weapons and ammunition LCM system.

In light of these achievements, a number of 'lessons learned' from the MTT Project's engagement in BiH can be highlighted as useful practices in other fragile or conflict-affected contexts, including the following (Gobinet and Carapic, 2015, pp. 147–48):

1. International assistance for PSSM capacity building and training needs to address the needs of local armed forces.
2. Courses and modules need to be progressively transferred to the training and doctrine command of the host nation's armed forces.
3. A high degree of coherence needs to be ensured between the training provided and available (or donated) equipment.
4. The development, implementation, and transfer of courses has to be accompanied by normative and institutional reforms at the strategic and operational levels.
5. Capacity building and training for weapons and ammunition management has to be coordinated with activities implemented by other international and bilateral partners.
6. The host nation must take ownership of both the capacity building and training of its armed forces and the broader LCM process.

The experiences and lessons learned from the MTT Project have been incorporated into subsequent PSSM projects. For instance, the MTT Project's approach was exported to Moldova, where the first assessment visits in 2013 also identified a lack of capacity for sustainable LCM. Since then, some of the capacity-building modules developed in BiH have been offered in Moldova, under the co-leadership of Austria and Switzerland, and with support from Canada and Germany. As in BiH, the implementation of the modules has followed the 3M Model (moderation, mentoring, and monitoring) in order to ensure sustainable handover to the Moldovan authorities.

The experiences of the MTT Project in BiH have also highlighted the importance of PSSM and LCM in post-conflict settings, as the international community has recognized. For the first time this was made explicit in a UN Security Council Resolution on Mali (UNSC, 2013a, paras. 16, 28). The resolution called for the Multidimensional Integrated Stabilization Mission in Mali to support the country's transitional authorities in coordinating with international partners to implement capacity building and training for weapons and ammunition management, and prevent the proliferation and trafficking of small arms and light weapons. The resolution thus set the scene for troop-contributing nations (including Switzerland, among others) to use the MTT Project as a model for PSSM and LCM activities in post-conflict settings.

The importance of PSSM in post-conflict settings and the role of peace-keeping operations in establishing effective weapons and ammunition management practices were further reiterated in UN Security Council resolutions 2117 (2013) and 2220 (2015), both of which recognized

the value of effective physical security and management of stockpiles of small arms, light weapons and ammunition as an important means to prevent the illicit transfer, destabilizing accumulation and misuse of small arms and light weapons, in accordance with global and regional standards, including through the application of voluntary guidelines, such as the International Ammunition Technical Guidelines (IATG) developed under the UN SaferGuard programme, and the International Small Arms Control Standards (ISACS) in arms and ammunition stockpile management practices (UNSC, 2013, p. 2; 2015a, pp. 3–4).

The MTT Project continues to apply these principles with considerable success in the complex post-conflict setting of Bosnia and Herzegovina. 

Endnotes

- 1 The official name of the Mobile Training Team is EUFOR ALTHEA 'Weapon and Ammunition Storage Site Management' MTT 2.1.6.1.
- 2 VF BiH was composed of the Bosnian and Croatian armed forces that operated during the 1992–95 war.
- 3 Author interviews with international PSSM experts working in BiH, Sarajevo, September–December 2015.
- 4 Despite the formation of a single armed force in BiH, in practice allegiance to ethnic political leadership occasionally continues to exist (author interviews with international and national military personnel, Sarajevo, autumn 2015; see also Berg, 2014, p. 154).
- 5 The UN Security Council has extended EUFOR's mandate in BiH 11 times since 2004: Resolutions 1639 (2005), 1722 (2006), 1785 (2007), 1845 (2008), 1895 (2009), 1948 (2010), 2019 (2011), 2074 (2012), 2123 (2013), 2183 (2014), and 2247 (2015).
- 6 As discussed in more detail below, these include the development of national legislation and standard operating procedures, and the establishment of an AWE training cell in the AFBiH's TRADOC.
- 7 Multinational partners include EUFOR, NATO HQ Sarajevo, OSCE BiH, and UNDP BiH.
- 8 The ammunition training cell is formally known as the Ammunition and Explosive Ordnance Storage Management Training Cell (AFBiH, 2014, slide 5).
- 9 As of the end of 2015 the inventory relates to a visual inspection of ammunition only. That said, some chemical tests of propellant are being carried out in the Trom Doboje demilitarization facility.
- 10 The following amounts of ammunition were inspected, per year: 2013: 740 tonnes; 2014: 2,736 tonnes; and 2015: 5,448 tonnes.
- 11 The full name of the Doboje Agreement, which was signed in Doboje on 27 March 2008, is Agreement on Final Disposal of All Rights and Obligations over Movable Property that Will Continue to Serve Defence Purposes.
- 12 See Defence Law, Articles 70(1), 79(2), and 70(3).
- 13 The MoD receives 20 per cent, while 80 per cent goes to the entity from which the property originated.
- 14 No ammunition or weapons surpluses have been sold since the adoption of the Doboje Agreement. That said, in 2010 the MoD did conclude two sales of ammunition and one of weapons—all three transactions having been organized and approved by the FBiH and RS ministries of defence (AFBiH AWE Task Force, 2014, slides 10 and 15).
- 15 Author interview with high-ranking officials in the BiH MoD, October 2015, Sarajevo.
- 16 The OSCE (2011, p. 1) expresses 'a preference to destroy surplus conventional ammunition, rather than to sell it'. 'However, if a participating State decides that a transfer is the preferred method of disposal of its surplus conventional ammunition, such a transfer will respect the Principles Governing Conventional Arms Transfers.'

- 17 Key informant interviews have suggested that there were considerable inconsistencies in the destruction process prior to 2013. Since then, experts indicate that, with the support of various international partners, the destruction process has been properly conducted and certified. An exploration of the inconsistencies present in BiH prior to 2013 is beyond the scope of this study, but will be explored in subsequent studies of the LCM process in the country.

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