Innovative Finance for Mine Action by Wallen, Nicholas,von Griesheim [from page 4]

1. "Oslo Declaration," APLC/CONF/2019/5/Add.1, https://bit.ly/3kbwWWt.
2. "Oslo Action Plan," APLC/CONF/2019/5/Add.1, https://bit.ly/2XrhnBD.
3. Social Finance is a not for profit organization that partners with governments, service providers, the voluntary sector and the financial community to find better ways of tackling social problems in the UK and globally. https://www.socialfinance.org.uk/halotrust.org
4. "Innovative Finance for Mine Action," Social Finance; Foreign, Commonwealth & Development Office; and The HALO Trust, https://bit.ly/39bX0dO.Brookings Institution, Global Impact Bond Database, October 1, 2021
5. IASC, The Grand Bargain, https://bit.ly/31QM3Ot .
6. Brookings, https://brook.gs/3C7WKbT.

Exploratory Study on the Current Limitations of Personal Protective Equipment and the Potential for Innovation by Htut [from page 10]

1. Smith, Andy, "PPE Development and Needs in HMA," *The Journal of Conventional Weapons Destruction*, Vol. 22.1, https://bit.ly/3lE7Zn0.
2. For the purpose of relevance and clarity, high velocity fragmentation in this paper refers to fragmentation from high explosive ordnance with metal bodies designed to fragment upon detonation.
3. For the purposes of brevity, HMA will refer to not just clearance of landmines, but also include Battle Area Clearance and EOD Callouts.
4. International Mine Action Standards (IMAS). (June 2013). IMAS 10.30, Safety & occupational health - Personal protective equipment Second Edition, Amendment 4, https://bit.ly/3EiUos9.
5. Ibid
6. Secondary fragmentation being defined as debris and other surrounding materials being ejected as a result of the blast of a landmine or UXO.
7. PPE may provide some degree of protection from high velocity fragmentation if the individual is further afield from the blast, dependent on blast radius and safety distance,
8. The reasons for the victims in question not wearing PPE range from individual breaches of SOPs by the deceased, an accident occurring during cluster munitions remnants clearance/survey where wearing of PPE is not required by National Mine Action Standards (NMAS) and generally not practiced by operators in the country, or accidents that occurred prior to the establishment of IMAS and the general practice of wearing body armor during demining.
9. This accident occurred during cluster munitions remnants clearance of a time-delayed submunition that had previously been excavated. The NMAS of the country in which this accident occurred do not recommend the wearing of PPE during cluster munitions clearance.
10. Rozen, Nimrod & Dudkiewicz, Israel. (2011). Wound Ballistics and Tissue Damage; Chapter from Alexander & Soudry, Michael. *Armed Conflict Injuries to the Extremities: A Treatment Manual.*
11. Hauer, T., Huschitt, N., Kulla, M. et al. (2011). Schuss- und Splitterverletzungen im Gesichts- und Halsbereich. [Bullet and shrapnel injuries in the face and neck regions. Current aspects of wound ballistics], HNO 59, 752. Available here: https://bit.ly/3bcp7um.
12. Rozen, Nimrod & Dudkiewicz, Israel. (2011). Wound Ballistics and Tissue Damage; Chapter from Alexander & Soudry, Michael. *Armed Conflict Injuries to the Extremities: A Treatment Manual.*
13. For simplicity, this model will also exclude the kinetic energy transfer and back-face deformation that takes place upon impact even when the PPE is not compromised.
14. Where m=mass and v=velocity in meters per second.
15. M. Bolduc and H. Jager. (2015). Summary of Newly Ratified NATO Standard AEP 2920, Ed. A, V1; Defence Research and Development Canada and Ministry of Defense, Defense Material Organization, The Hague, Netherlands.
16. SABIC Innovative Plastics. Technical Manual, Lexan Sheet, https://bit.ly/3CwkOXa.
17. "Safe and secure management of ammunition through the UN SaferGuard Programme, UN SaferGuard, United Nations Office for Disarmament Affairs (UNODA). (2015)., https://unsaferguard.org/.
18. Federation of American Scientists, Federation of American Scientists, Introduction to Naval Engineering - Warheads , https://bit.ly/3Cm24tk.
19. Spearman, M. Leroy, Braswell, Dorothy O. (August 1993). Aerodynamics of a Sphere and an Oblate Spheroid for Mach Numbers from 0.6 To 10.5 Including Some Effects of Test Condition, Technical Memorandum 109016, NASA,
20. Technical Paper No. 12, Fragment and Debris Hazards, US Department of Defense Explosives Safety Board, July 1975, https://bit.ly/3nztRQu.
21. The maximum distance for a rock being ejected from a blast as secondary fragmentation "scales at 29.2m divided by 0.4 power of explosive weight" (USDOD, 1975).
22. The total weight of the munition, or munitions, including packaging and palletization.
23. BAK to BSU/BSG – Equipment Listing. https://bit.ly/3pFWYnW
24. Encyclopedia Britannica. Rock, Geology, Physical Properties, https://bit.ly/3bdzVsw.
25. Redjala, S., Aït Hocine, N., Ferhoum, R. et al. UV Aging Effects on Polycarbonate Properties, (2020). J Fail. Anal. and Preven. 20, 1907–1916, https://bit.ly/3bfLorg.
26. West, Michael & Ruys, Andrew & Bosi, Stephen. (2005). The Effect of the Ultraviolet Radiation Environment of LEO Upon Polycarbonate Materials. 43rd AIAA Aerospace Sciences Meeting and Exhibit - Meeting Papers. 10.2514/6.2005-662.
27. International Mine Action Standards (IMAS), (Issue 1.0, July 2004, Amendment 1 July 2013), IMAS Technical Note 10.10/02, Safety Notes- General, https://bit.ly/3miQidE.
28. Bardelius, A, Larsson, C. "Report on a second blast test of the ROFI Face Mask," Swedish Rescue Services Agency, 2008, https://bit.ly/2ZlVkNi.
29. ROFI, https://bit.ly/3miWFxe.
30. Forster, Amanda & Leber, Dennis & Engelbrecht-Wiggans, Amy & Landais, Virginie & Chang, Allen & Guigues, Emilien & Messin, Guillaume & Riley, Michael. (2020). Linking Theory to Practice: Predicting Ballistic Performance from Mechanical Properties of Aged Body Armor. Journal of Research of the National Institute of Standards and Technology. 125. 10.6028/jres.125.026.
31. Grant, H., Kubu, B., Roberts, J., Collins, M., & Woods, D. J. (2012, November). Body Armor Use, Care, and Performance in Real World Conditions: Findings from a National Survey. Office of Justice Programs. Retrieved September 18, 2021, https://bit.ly/3GpSlV5.
32. Konarzewski, Vitor & Spiekemann, Fernando & Santana, Ruth. (2019). Natural ageing of polyaramide fiber from ballistic armor. Polímeros. 29. 10.1590/0104-1428.05617.
33. Li, Yan & Li, Changsheng & Zheng, Jian & Zhou, Hong & Yunjun, Luo & Xiancong, Huang. (2015). Effects of water on the ballistic performance of para-aramid fabrics: three different projectiles. Textile Research Journal. 86. 10.1177/0040517515612355.
34. Holmes, G. , McDonough, W. , , J. and Ho, D. (2010), "The Role of Folding in the Degradation of Ballistic Fibers," Polymer Composites, https://bit.ly/3BkiuAZ.
35. Grant, H., Kubu, B., Roberts, J., Collins, M., & Woods, D. J. (2012, November). Body Armor Use, Care, and Performance in Real World Conditions: Findings from a National Survey. Office of Justice Programs. Retrieved September 18, 2021, https://bit.ly/3GpSlV5.
36. International Mine Action Standards (IMAS), (Issue 1.0, July 2004, Amendment 1 July 2013), IMAS Technical Note 10.10/02, Safety Notes- General, https://bit.ly/3miQidE.
37. Dabkiewicz, Igor & Silva, Italo & Marcuzzo, Jossano. (2016). Study of Aramid Fiber/Polychloroprene Recycling Process by Thermal Degradation. *Journal of Aerospace Technology and Management*. 8. 373. 10.5028/jatm.v8i3.593.
38. Ibid
39. Zhang, Junjie & Wang, Lei & Halden, Rolf & Kannan, Kurunthachalam. (2019). Polyethylene Terephthalate and Polycarbonate Microplastics in Sewage Sludge Collected from the United States. Environmental Science & Technology Letters. 2019. 10.1021/acs.estlett.9b00601.
40. Konieczna A, Rutkowska A, Rachoń D. Health risk of exposure to Bisphenol A (BPA). Rocz Panstw Zakl Hig. 2015;66(1):5-11. PMID: 25813067.
41. Morin, Nicolas & Arp, Hans Peter & Hale, Sarah. (2015). Bisphenol A in Solid Waste Materials, Leachate Water and Air Particles from Norwegian Waste Handling Facilities: Presence and Partitioning Behavior. Environmental science & technology. 49. 10.1021/acs.est.5b01307.
42. Ibid
43. Security Devices. http://www.secdevinc.com/SD%20blast%20visor.htm, https://bit.ly/3BbWrfK.

Accident Response to Mitigate Risk: A Call to Action by Gates [from page 19]

1. "IMAS 10.60: Safety and Occupational Health–Investigation and reporting of accidents and incidents," Second Edition, May 2020, https://bit.ly/2YysvwR.
2. Ibid.
3. Evans, Roly. 2020. "International Mine Action Standard 10.60 Safety & Occupational Health – Investigation and Reporting of Accidents and Incidents: Notes on the Revised Second Edition." ***The Journal of Conventional Weapons Destruction*** 24 (2), 7, https://bit.ly/3xEu5dP.
4. Tirre, Michael. Program Manager in the Bureau of Political-Military Affairs, Office of Weapons Removal and Abatement at the U.S. Department of State. "Interview with Michael Tirre" via Microsoft Teams on 7/16/21.
5. Ibid.
6. "Explore Resources, Publications," Geneva International Center for Humanitarian Demining (GICHD), https://bit.ly/3pbUDzj.
7. Geneva International Center for Humanitarian Demining (GICHD). 2020. "Accident Investigation Course."
8. "MACRA: What is MACRA?" Geneva International Center for Humanitarian Demining (GICHD), https://bit.ly/3j1jzY5.
9. MACRA, iMMAP, 2020, https://bit.ly/3xICJbw.
10. Center for International Stability and Recovery (CISR). 2021. "Humanitarian Demining Accident and Incident Database (AID)." James Madison University, https://bit.ly/31hy57T.
11. Ibid.
12. Evans, Roly. 2020. "International Mine Action Standard 10.60 Safety & Occupational Health – Investigation and Reporting of Accidents and Incidents: Notes on the Revised Second Edition." *The Journal of Conventional Weapons Destruction* 24 (2), 7, https://bit.ly/3rpjGlq.

Climate Change and Extreme Weather: How Can Mine Action Programs Adapt to Our Changing Environment? by Cottrell and Stowe [from page 23]

1. "What is Climate Change?" Met Office, https://bit.ly/3uUn5rZ.
2. "Climate Change: How do we know?" NASA (2021), https://climate.nasa.gov/evidence/.
3. "Climate change, widespread, rapid, and intensifying," IPCC, https://bit.ly/3lj2PNK.
4. "Soil structure and its benefits," Royal Society, 1 April 2020, https://bit.ly/3ljCMG9.
5. Bajic, Milan; Ivelja, Tamara; Hadzic, Emina; Balta, Haris; Skelac, Goran; and Grujic, Zoran (2015) "Impact of Flooding on Mine Action in Bosnia and Herzegovina, Croatia, and Serbia," *The Journal of ERW and Mine Action*: Vol. 19 : Iss. 1, Article 12, https://bit.ly/3iDmuWV.
6. Global Forest Resources Assessment 2010, Country Reports – Afghanistan," Forestry Department. Food and Agriculture Organization of the United Nations, https://bit.ly/2Yq6rF0.
7. "Initial Biennial Update Report under the United Nations Framework Convention on Climate Change" July 2019, Islamic Republic of Afghanistan National Environmental Protection Agency, https://bit.ly/3Bx7xNz.
8. Glinski, Stefani, "Made worse by tree loss, flooding forces migration in Afghanistan," 8 September 2020,. https://tinyurl.com/2eh9hfnf.
9. ICRC (2014). Angola Red Cross responds to increasing cholera cases due to floods, https://tinyurl.com/ms68fp68, accessed 21 July 2021
10. Climate Change Knowledge Portal Angola (2021), https://bit.ly/3lj5hUs .
11. "Climate Risk Profile Angola," USAID, accessed 6 October 2021, https://bit.ly/2YnFjpN .
12. "Syrian landmines wash into Lebanon due to floods," Arab News, 12 May 2021, https://bit.ly/3Agadxp .
13. Republic of Tajikistan (2017), National Strategy of the Republic of Tajikistan on humanitarian mine action for 2017-2020, accessed 6 October 2021, http://www.mineaction.tj/news/st/.
14. Varenikova, Maria "Battling Wildfire and Pandemic, Ukraine Faces a New Foe: Landmines," The New York Times, 3 October 2020, https://nyti.ms/3leWLFS.
15. Schwartzstein, Peter, "Climate Change May Be Blowing Up Arms Depots," Scientific American, 14 November 2019, https://bit.ly/3iyAa5p .
16. Future of the Sea: Hazardous Chemicals and Physical Contaminants in the Marine Environment," Foresight Government Office for Science, https://tinyurl.com/wa2yump4.
17. "Climate Risk Country Profile: Vietnam (2020)," The World Bank Group and Asian Development Bank, 2020, https://bit.ly/3iDTRZn .
18. Climate Change Knowledge Portal Vietnam (2021): World Bank Climate Group
19. Climate Risk Country Profile: Vietnam (2020)," The World Bank Group and Asian Development Bank, 2020, https://bit.ly/3iDTRZn .
20. Ibid
21. Ibid
22. "Report on Explosive Remnants of War Contamination in Vietnam Based on the 'Vietnam Explosive Remnants of War Contamination Survey and Mapping – Phase 1 Project,'" VNMAC, 2018, p. 38.
23. "Viet Nam: Floods , Landslides and Storms Office of the UN Resident Coordinator. Situation Report, 1(1), 1–8," 26 November 2021, https://tinyurl.comb4yhv348.
24. Such as IMAS 8.20 "Technical Survey," IMAS, https://bit.ly/3lgAck3.
25. "Environmental Management in Mine Action," IMAS, https://bit.ly/2YsS5Dy.
26. "Risk Management in Mine Action.", IMAS, https://bit.ly/3iFy186.
27. "Non-Technical Survey," IMAS, https://bit.ly/3BwLV3T.
28. Döll, Petra and Patricia Romero-Iankao, "How to embrace uncertainty in participatory climate change risk management – A roadmap, Earth's Future, https://bit.ly/3FnTagx.
29. Ibid
30. "Google and FAO launch new Big Data tool for all," Food and Agriculture Organization of the United Nations, 16 September 2020, https://bit.ly/3Djt64o.
31. UNDP Climate Adaptation, https://www.adaptation-undp.org/about, and the Global Adaptation Network, https://www.unep.org/gan/.
32. Country Pages, NDC Partnership, https://bit.ly/3FntlgU.
33. ThinkHazard was developed in partnership with the World Bank Group, Deltares, Camptocamp, and the Bureau de Recherches Géologiques et Minières, https://thinkhazard.org/.
34. Climate Centre, https://www.climatecentre.org/resources/publications.

Tailoring Explosive Ordnance Risk Education: How MAG Addresses Gender/Cultural Sensitivities and Local Risk-taking Behavior by Kasack [from page 31]

1. Explosive Ordnance Risk Education (EORE) is the globally accepted term since revised IMAS 12.10 was approved in September 2020 (Second Edition, Amendment 3). The term EO is defined in IMAS 04.10.
2. Fourteen MAG country programs with an EORE component over the past twelve months: Angola, Chad, Mali, Nigeria, Somalia, South Sudan, Zimbabwe; Iraq, Lebanon, Syria; Cambodia, Laos, Myanmar, Vietnam.
3. Oslo Action Plan, 2019, https://bit.ly/2WudnQe.
4. ibid
5. Exceptions are countries with ongoing conflict where clearance including explosive ordnance disposal is not yet possible, e.g., Nigeria, Mali, and Myanmar.
6. The UN Gender Guidelines for Mine Action state, "Gendered patterns of activity and attitudes towards mine, ERW and IED contamination together with gender norms create different types of risk for women, girls, boys, and men.", p. 41, https://bit.ly/2Yk5eyq.
7. "16-year-old landmine activist and victim educates her community on the risks of explosive ordnance." Assembly, August 11, 2020, https://bit.ly/3uJigBX.
8. Accidents are part of incidents. However, to distinguish the main categories of interest in mine action we distinguish EO accidents as those that led to an injury/death from EO incidents. Incidents include finds of EO, whether removed or not, and explosions heard/observed from fire/slash and burn agriculture, etc.
9. See for example analysis of EO accident and casualty data of child victims in UNICEF's child-focused Victim Assistance guidance. "Assistance to Victims of Landmines and Explosive Remnants of War: Guidance on Child-focused Victim Assistance," UNICEF 2014, https://uni.cf/2Yazzzz.
10. "Somalia, Impact," April 2020, *Landmine & Cluster Munitions Monitor*, https://bit.ly/2WwYigR.
11. UNMAS report in the National Protection Cluster (6 September 2021), Somalia.
12. Dhaysane, Mohammed. "Girls drop out of school at an alarming rate in Somalia," 25 June 2021, Andalu Agency. https://bit.ly/3uv9aZf.
13. 58 out of 142 children reported as killed or maimed by armed conflict due to EO. See UN Security Council report S/2020/1205, Children and armed conflict in South Sudan, p.7, para.32, https://bit.ly/3a3IbdH.
14. See GICHD's recently published desk study "Measuring the Results of Explosive Ordnance Risk Education (EORE)", A Working Paper, for more details on KAP-survey versus KAP-study. https://www.gichd.org/en/our-response/risk-education/advisory-group/ under Resources.
15. Applying an age- and gender lens when analyzing the information received is crucial – see Boyd, Helaine, Sebastian Kasack, and Nöe Falk Nielsen, "Measuring Behavior Change Resulting from EORE and the Need for Complementary Risk Reduction Activities," *The Journal of Conventional Weapons Destruction*, Vol 12, Issue. 1 (2020), https://bit.ly/3owNc7e .
16. Natron is a naturally occurring mixture of a kind of soda ash, baking soda, etc. Natron deposits can be found in saline lake beds which arose in arid environments. Throughout history, natron has had many practical applications that continue today in a wide range of modern uses of its constituent mineral components. (See Wikipedia entry with pictures from Chad, https://en.wikipedia.org/wiki/Natron).
17. See OAP Action point #28: "Integrate mine risk education activities with wider humanitarian, development, protection and education efforts, as well as with ongoing survey, clearance and victim assistance activities to reduce the risk to the affected population and decrease their need for risk-taking."
18. Dance video: https://bit.ly/3Df9RJu; Kachin video with celebrity: https://bit.ly/3mvo91N; Shan video with singer: https://bit.ly/2YnX1ZW.
19. UNHCR, SitRep, 18/07/20.
20. IMAS 12.10, Second Edition, 1 April 2010, "Explosive Ordnance Risk Education." see IMAS 12.10, Chapter 5. "Needs, vulnerabilities, capacities assessment and information management." https://bit.ly/3uGADr4.
21. Such as the United Nations Childrens' Fund, United Nations Mine Action Service, and United Nations Development Programme.

Barrier Analysis and Explosive Ordnance Risk Education by Fletcher and McGrath [from page 42]

1. "Designing for behaviour change: A practical field guide," FSN Network (Food Security and Nutrition Network), 2017, https://bit.ly/2XdMrVu.
2. The project requirements stipulated that the risk mitigation component should target the highest-risk group in the area

that was either "reckless" or "forced." The FGD participants suggested children were primarily at risk because they were "uninformed" or "unaware," and that traditional EORE sessions should limit their risks. Teens and young adults, however, were identified as a high-risk group who were a combination of reckless and forced, in that they did not have any alternative places to spend their free time. The wide age range (13¬–24) was selected due to their perceived risk and that they fit the risk profile criteria rather than an assumption that the group members behaviors were driven by similar factors.

3. "Explosive Hazards Barrier Analysis Survey," The HALO Trust, https://bit.ly/3cZLFzv.
4. The girls surveyed explained that they entered these areas because it was on a route they regularly use. The boys surveyed explained that they enter these areas because they collect scrap metal, are rubble cleaners, or construction workers. Both explanations suggest that girls and boys are at-risk and should be targeted with messaging.
5. It should be noted that the messaging should not be that risk can be eliminated, as this messaging is both incorrect and it could be used to place undue blame and/or shame on accident victims.

Hidden Crisis in Borno State by Sutton [from page 47]

1. "Nigeria Impact." Landmine & Cluster Munition Monitor, April 20, 2021, https://bit.ly/3ClGiA5.

Mechanical Equipment in IED Clearance: Observations from Iraq by Lodhammar and Wilkinson [from page 53]

1. "Mechanical Demining: From 1942 to the Present," *The Journal of Conventional Weapons Destruction*, Vol. 12, Issue 2 (Mar., 2008), pp. 69-70, https://bit.ly/3iTivFR.
2. "A Study of Mechanical Application in Demining, Geneva International Centre for Humanitarian Demining (GICHD)," Geneva 2004, https://bit.ly/3a8LoJ7.
3. "The Elusive Just Enough: Re-inventing Explosive Hazard Clearance Management in Iraq," ***The Journal of Conventional Weapons Destruction***, Vol. 24, Issue 3 (Sept., 2021), pp. 122-126, https://bit.ly/3mtlep0.
4. Brisance is the shattering capability of a high explosive, determined mainly by its velocity of detonation and therefore blast pressure.
5. Drawbar pull is the amount of horizontal force available to a vehicle at the drawbar for accelerating or pulling a load
6. "United Nations Improvised Explosive Device Disposal Standards, United Nations Mine Action Service (UNMAS)," May 2018, https://bit.ly/3uK6erR.
7. "Remote means" are methodologies for conducting render safe actions conducted from a safe distance – an EOD robot cutting a wire would be a good example. "Minimum time in target area" describes a disposal operator spending as little time as possible close to an IED (for example, whilst setting up a semi remote action) prior to it being rendered safe.
8. Figures courtesy of Gemma Welsh, Anbar Location Manager, The HALO Trust in Iraq.
9. "IED Threat Consistency and Predictability in Fallujah: A 'Simple' Model for Clearance," ***The Journal of Conventional Weapons Destruction***, Vol. 23, Issue 2 (Jul., 2019), pp. 7-12, https://bit.ly/2Ymy3uh.
10. For a more detailed analysis of the variables affecting IED clearance rates, see "The Lethality Index: Re-Conceptualizing IED Clearance Planning and Delivery in Iraq," ***The Journal of Conventional Weapons Destruction***, Vol. 24, Issue 1 (Jul., 2020), pp. 38-44, https://bit.ly/3uKxN45.

A Pressing Need: Decades of Agreement, Few Results on Arms Record-Keeping by Alpers [from page 60]

1. GICHD (2012a). 'Mines Advisory Group's Physical Security and Stockpile Management Programme: Mine Action and Armed Violence Reduction.' Geneva International Centre for Humanitarian Demining. Burundi Case Study. Geneva: September, p.4. Accessed 26 March 2021 at: https://www.gichd.org/fileadmin/GICHD/topics/development/ma_development-2/AVR/AVR-Burundi-MAG-case-study-Sep2012.pdf
2. MAG (2021). 'Where we Work.' Mines Advisory Group web site, at: https://www.maginternational.org/what-we-do/where-we-work/
3. GICHD (2012b). 'Mine Action Support for Armed Violence Reduction: Mission Creep or Responding to Wider Security Needs?' Geneva International Centre for Humanitarian Demining. Geneva: Policy Brief, December, pp.1,14. Accessed 26 March 2021 at: https://www.gichd.org/fileadmin/GICHD-resources/rec-documents/AVR-Policy-brief-Dec2012.pdf
4. de Tessières, Savannah, Himayu Shiotani and Sebastian Wilkin (2019). 'The Role of Weapon and Ammunition Management in Preventing Conflict and Supporting Security Transitions.' Geneva: 25 February, p.3. Accessed 27 March 2021 at: https://unidir.org/publication/role-weapon-and-ammunition-management-preventing-conflict-and-supporting-security.
5. GICHD (2012b). 'Mine Action Support for Armed Violence Reduction: Mission Creep or Responding to Wider Security Needs?' Geneva International Centre for Humanitarian Demining. 'In Africa, most states are still in need of functioning long-term record-keeping solutions, including adequate infrastructure, hardware and software capable of linking all records nationally.' Geneva: Policy Brief, December, p.14. Accessed 26 March 2021 at: https://www.gichd.org/fileadmin/GICHD-resources/rec-documents/AVR-Policy-brief-Dec2012.pdf
6. As with all ArmsTracker installations for francophone clients, Burkinabé versions are in French. The software is also available in Spanish, with Khmer and Somali versions under development.
7. https://armedviolencereduction.org/
8. UNODA (2018). 'Supporting implementation of ECOWAS SALW Convention Article 10.' United Nations Office for Disarmament Affairs. New York, undated. Accessed 27 March 2021 at: https://www.un.org/disarmament/unscar/ecowas/
9. CAVR (2020). 'Integrating Small Arms Record-keeping in West Africa.' Centre for Armed Violence Reduction e-News. Sydney, 1 May. Accessed 27 March 2021 at: https://armedviolencereduction.org/integrating-small-arms-record-keeping-in-west-africa/
10. de Tessières, Savannah, Himayu Shiotani and Sebastian Wilkin (2019). 'The Role of Weapon and Ammunition Management in Preventing Conflict and Supporting Security Transitions.' Geneva: 25 February, pp.4,22. This UNIDIR assessment found that: 'transfer controls, marking and record-keeping, as well as tracing… are often neglected or under-developed' and that 'poor record-keeping remains one of the primary shortcomings among States in Africa.' Accessed 27 March 2021 at: https://unidir.org/publication/role-weapon-and-ammunition-management-preventing-conflict-and-supporting-security
11. Holtom, Paul and Moshe Ben Hamo Yeger (2018). 'Implementing the [UN] Programme of Action and International Tracing Instrument – An Assessment of National Reports, 2012–17.' Small Arms Survey, the Graduate Institute of International and Development Studies. Geneva: June, p.68: 'The 76 requests for assistance to build capacity for record-keeping represent the highest number of assistance requests during 2012–17.' Accessed 9 March 2021 at: http://www.smallarmssurvey.org/fileadmin/docs/U-Reports/SAS-Report-PoA-ITI-2012-17.pdf
12. UNODA (2021). 'International Cooperation and Assistance.' United Nations Programme of Action on small arms and light weapons. UN Office for Disarmament Affairs, New York: undated. Accessed 8 March 2021 at: https://smallarms.un-arm.org/international-assistance
13. Muggah, Robert and Francis Sang (2013). 'The enemy within: rethinking arms
14. availability in sub-Saharan Africa.' Conflict, Security & Development, 13:4, 417-447.
15. Florquin, Nicolas, Karina Lynge and Klaus Ljørring Pedersen (2009). 'Beyond Weapons Collection: Promoting Safe and Responsible SA/LW Management.' *Journal of ERW and Mine Action*: 13:1,27.
16. Newton, Mike (2020) "Weapons Marking and Registration in Bosnia and Herzegovina: A Model for a Regional Approach to SALW Life-Cycle Management in the Western Balkans," *The Journal of Conventional Weapons Destruction*: Vol. 24: Iss. 2, Article 9. Available at: https://commons.lib.jmu.edu/cisr-journal/vol24/iss2/9.
17. GunPolicy.org (2021). A global project of the Sydney School of Public Health which compares armed violence, firearm injury prevention and gun law across 250 jurisdictions world-wide. Accessed 9 March 2021 at: https://gunpolicy.org
18. RECSA (2020). 'Statement by RECSA at the Third Review Conference on the United Nations Programme of Action on SALW and the ITI.' Regional Centre on Small Arms in the Great Lakes Region, the Horn of Africa, and Bordering States. New York, 20 June:5,6. Accessed 9 March 2021 at: https://recsasec.org/wp-content/uploads/2018/09/recsa.pdf
19. Heinemann-Grüder, Andreas (2020). 'Assessment of the HALO Trust Marking and Registration of Small Arms and Light Weapons Project in Bosnia-Herzegovina, 2017-2019.' Bonn International Center for Conversion. Bonn, April; p.5. Accessed 9 Mar 2021 at: https://www.bicc.de/publications/publicationpage/publication/assessment-of-the-halo-trust-marking-and-registration-of-small-arms-and-light-weapons-project-in-bos/
20. Leff, Jonah (2021). In: 'Practical Tools for Addressing the Risk of Weapons Diversion.' Stimson Center, Washington, DC. Webinar at 54'54", last accessed 1 April at: https://www.youtube.com/watch?v=cdWZoe6bIKo
21. SADC (2001). 'Protocol on the Control of Firearms, Ammunition and Other Related Material in the Southern African Development Community (SADC) Region.' Blantyre, 14 August: Art.7. Accessed 9 March 2021 at: http://www.poa-iss.org/regionalorganizations/SADC/Instruments/SADC%20Protocol.pdf
22. East African Community (2004). 'Nairobi Protocol for the Prevention, Control and Reduction of Small Arms and Light Weapons in the Great Lakes Region, the Horn of Africa and Bordering States.' Nairobi, 21 April; Art.5-7, pp.6-7. Accessed 8 March 2021 at: https://www.sipri.org/sites/default/files/research/disarmament/dualuse/pdf-archive-att/pdfs/recsa-nairobi-protocol-for-the-prevention-control-and-reduction-of-small-arms-and-light-weapons-in-the-great-lakes-region-and-the-horn-of-africa.pdf
23. ECOWAS (2006). 'Convention on Small Arms and Light Weapons, Their Ammunition and Other Related Materials.' Economic Community of West African States. Abuja, 14 June; IV:9-11. Accessed at: http://www.poa-iss.org/regionalorganizations/ecowas/ecowas%20convention%202006.pdf
24. ECCAS (2010). 'Central African Convention for the Control of Small Arms and Light Weapons.' Economic Community of Central African States. Kinshasa, 30 April 2010; III:7-9. Accessed 8 March 2021 at: http://disarmament.un.org/treaties/t/kinshasa/text
25. de Tessières, Savannah, Himayu Shiotani and Sebastian Wilkin (2019). 'The Role of Weapon and Ammunition Management in Preventing Conflict and Supporting Security Transitions.' Geneva: 25 February, 3.3.2;p.22. This UNIDIR assessment found that: 'while regional instruments such as the ECOWAS Convention require States to create a national electronic database of State- and civilian-owned weapons, none of the four ECOWAS States that conducted consultations have implemented this provision.' Accessed 9 March 2021 at: https://unidir.org/publication/role-weapon-and-ammunition-management-preventing-conflict-and-supporting-security
26. European Commission (2018). "Elements Towards an EU Strategy against illicit Firearms, Small Arms & Light Weapons and their Ammunition 'Securing Arms, Protecting Citizens'" found that 'The secure management of national small arms and ammunition stockpiles is instrumental in curbing illicit proliferation' and that 'marking and thorough record-keeping are vital for successful tracing.' It also promised that 'The EU and its Member States will continue to help other countries to improve the management and security of state-held stockpiles by strengthening national legislative and administrative frameworks and institutions that regulate the legitimate supply and stockpile management of SALW and ammunition for defence and security forces, with a particular focus on marking and record-keeping.' Brussels, 13 June; 2.2.1.-2.2.3, pp.6-8. Accessed 8 March 2021 at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=JOIN%3A2018%3A17%3AFIN
27. UN General Assembly A/CONF/192/15 (2005). 'International Instrument to Enable States to Identify and Trace, in a Timely and Reliable Manner, Illicit Small Arms and Light Weapons.' New York, 8 December: IV, 11. 'States will ensure that accurate and comprehensive records are established for all marked small arms and light weapons within their territory.' Accessed 9 March 2021 at:
28. http://www.poa-iss.org/InternationalTracing/ITI_English.pdf
29. UN Office for Disarmament Affairs (2012). 'Modular Small-arms-control Implementation Compendium' (MOSAIC) 05.30 2012(E)V1.0. New York, 27 August; 6-6.6,pp.V,11-13. Accessed 9 March 2021 at: https://unoda-web.s3.amazonaws.com/wp-content/uploads/2019/05/MOSAIC-05.30-2012EV1.1.pdf
30. de Tessières, Savannah (2018). 'Effective Weapons and Ammunition Management in a Changing Disarmament, Demobilization and Reintegration Context – A Handbook for United Nations DDR Practitioners.' UN Department of Peacekeeping Operations and UN Office for Disarmament Affairs. New York, pp.70,73. Accessed 8 March 2021 at: https://www.un.org/disarmament/wp-content/uploads/2019/08/DDR-handbook.pdf

Unexplored Opportunities – Multi-Sector Strategies for Collaboration in Underwater Unexploded Ordnance Remediation by Price [from page 64]

1. Beck, Aaron J., Martha Gledhill, Christian Schlosser, Beate Stamer, Claus Böttcher, Jens Sternheim, Jens Greinert, and Eric P. Achterberg, "Spread, Behavior, and Ecosystem Consequences of Conventional Munitions Compounds in Coastal Marine Waters," Frontiers in Marine Science 5 (2018), https://bit.ly/3ofIeel.
2. Catovic, Alan, and Elvedin Kljuno, "A Novel Method for Determination of Lethal Radius for High-Explosive Artillery Projectiles," Defence Technology 17, no. 4 (2021): 1217–33, https://bit.ly/31nrwky.
3. Siska Prifiharni et al., "Corrosion Performance of Steel and Galvanized Steel in Karangsong and Limbangan Sea Water Environment," 2018, https://bit.ly/3oN1alz.
4. Ibid.
5. Ibid.
6. Brett Howard, Jana Aker, and Mike Reid, "Risk Management for Unexploded Ordnance (UXO) in the Marine Environment," *Dalhousie Journal of Interdisciplinary Management* 8, no. 2 (2012), https://bit.ly/3oWAxe9.
7. "Mariana Islands Range Complex - SPREP." ENVIRONMENTAL IMPACT STATEMENT/ OVERSEAS ENVIRONMENTAL IMPACT STATEMENT. Commander, U.S. Pacific Fleet, Executive Agent. Accessed October 8, 2021. https://www.sprep.org/attachments/NMarianas_13b.pdf. In accordance with The National Environmental Policy Act and Executive Order 12114
8. Alan Catovic and Elvedin Kljuno, "A Novel Method for Determination of Lethal Radius for High-Explosive Artillery Projectiles," Defence Technology 17, no. 4 (2021): pp. 1217-1233, https://doi.org/10.1016/j.dt.2020.06.015.
9. Brett Howard, Jana Aker, and Mike Reid, "Risk Management for Unexploded Ordnance (UXO) in the Marine Environment," *Dalhousie Journal of Interdisciplinary Management* 8, no. 2 (2012), https://bit.ly/3oWAxe9.
10. OSU Center for Health Sciences. Global Explosive Hazard Mitigation, https://bit.ly/3mCOiwG.
11. James Proffitt, "Unexploded Ordnance: Lake Erie Shoreline Site of Long-Term Munitions Study," Unexploded Ordnance: Lake Erie shoreline site of long-term munitions study (Great Lakes Now, January 7, 2021), https://bit.ly/2YATNDb.
12. Beck J. Aaron et al., "In Situ Measurements of Explosive Compound Dissolution Fluxes from Exposed Munition Material in the Baltic Sea," Environmental Science & Technology 53, no. 10 (2019): pp. 5652-5660, https://bit.ly/3atLCdW.
13. The Associated Press, "Hawaii Plans to Leave Underwater World War II Ordnance in Place off Maui," Military Times, August 24, 2020, https://bit.ly/2YBpoEQ.
14. "Munitions Response Programs (MMRP's)," Underwater Munitions, July 10, 2013, https://bit.ly/2X6OydG.
15. Richard Hine and Brian Skubin, "Thayermahan Teams up with USA Environmental to Remove Unexploded Ordnance," Thayer Mahan, October 14, 2020, https://bit.ly/3v1NMeq.
16. In this context, homophily refers to how tangentially related fields or types of organizations share investment and operational spaces with one another in ways that complement each other's strengths when sharing core objectives.
17. "SNMCMG1 Completes Historical Ordnance Disposal Operations in France," (NATO | OTAN, August 24, 2021), https://bit.ly/3FBa5we.
18. Heather Hakola et al., "Dredging Equipment Modifications," Environmental Security Technology Certification Program (ESTCP Project MM-0321, December 2006), https://bit.ly/3mGg3mV.
19. "SNMCMG1 Completes Historical Ordnance Disposal Operations in France." NATO | OTAN, August 24, 2021, https://bit.ly/2ZLLh4C.
20. Official U.S. Navy Page, "Sailor Conducts a SeaBotix Remotely Operated Vehicle during Sri Lanka Humanitarian Mine Action Mission," Official U.S. Navy Page | Flickr, September 1, 2016, https://bit.ly/31s9j52.
21. Staff Sgt. Nathanael Carberry, "Task Force Koa Moana 20 Explosive Ordnance Disposal Marines Make History on Peleliu," United States Marine Corps Flagship, August 11, 2020, https://bit.ly/2ZQr91q.
22. "TF KM20 LEON Marines Find First UXO [Image 7 of 7]," PALAU, 07.28.2020, Photo by Sgt. Stephanie Cervantes, https://bit.ly/3bsfMit.
23. Page, Official U.S. Navy. "Sailor Conducts a SeaBotix Remotely Operated Vehicle during Sri Lanka Humanitarian Mine Action Mission," Official U.S. Navy Page | Flickr, September 1, 2016. https://bit.ly/31obg2L.

References

» Aaron, Beck J., Eefke M. van der Lee, Anja Eggert, Beate Stamer, Martha Gledhill, Christian Schlosser, and Eric P. Achterberg. "In Situ Measurements of Explosive Compound Dissolution Fluxes from Exposed Munition Material in the Baltic Sea." Environmental Science & Technology 53, no. 10 (2019): 5652–60. https://doi.org/10.1021/acs.est.8b06974.s001.
» The Associated Press. "Hawaii Plans to Leave Underwater World War II Ordnance in Place off Maui." Military Times, August 24, 2020. https://www.militarytimes.com/news/your-military/2020/08/23/hawaii-plans-to-leave-underwater-world-war-ii-ordnance-in-place-off-maui/.
» Beck, Aaron J., Martha Gledhill, Christian Schlosser, Beate Stamer, Claus Böttcher, Jens Sternheim, Jens Greinert, and Eric P. Achterberg. "Spread, Behavior, and Ecosystem Consequences of Conventional Munitions Compounds in Coastal Marine Waters." Frontiers in Marine Science 5 (2018). https://doi.org/10.3389/fmars.2018.00141.
» Carberry, Staff Sgt. Nathanael. "Task Force Koa Moana 20 Explosive Ordnance Disposal Marines Make History on Peleliu." United States Marine Corps Flagship, August 11, 2020. https://www.marines.mil/News/News-Display/Article/2308381/task-force-koa-moana-20-explosive-ordnance-disposal-marines-make-history-on-pel/.
» Catovic, Alan, and Elvedin Kljuno. "A Novel Method for Determination of Lethal Radius for High-Explosive Artillery Projectiles." Defence Technology 17, no. 4 (2021): 1217–33. https://doi.org/10.1016/j.dt.2020.06.015.
» "A Guide to Survey and Clearance of Underwater Explosive Ordnance." GICHD, June 2016. https://www.gichd.org/fileadmin/GICHD-resources/rec-documents/Guide-Underwater-Clearance-June2016.pdf.
» Hakola, Heather, William Wild, Timothy Welp, Cheryl Pollock, Virginia Dickerson, Lynn Helms, Lance Brown, and Barbara Sugiyama. "Dredging Equipment Modifications." Environmental Security Technology Certification Program. ESTCP Project MM-0321, December 2006. https://apps.dtic.mil/dtic/tr/fulltext/u2/a603938.pdf.
» "Hawaii Plans to Leave Underwater World War II Ordnance in Place off Maui." Military Times. The Associated Press, August 24, 2020. https://www.militarytimes.com/news/your-military/2020/08/23/hawaii-plans-to-leave-underwater-world-war-ii-ordnance-in-place-off-maui/.
» Hine, Richard, and Brian Skubin. "Thayermahan Teams up with USA Environmental to Remove Unexploded Ordnance." Thayer Mahan, October 14, 2020. https://www.thayermahan.com/press-and-media/thayermahan-teams-up-with-usa-environmental-to-remove-unexploded-ordnance.
31. Howard, Brett, Jana Aker, and Mike Reid. "Risk Management for Unexploded Ordinance (UXO) in the Marine Environment." *Dalhousie Journal of Interdisciplinary Management* 8, no. 2 (2012). https://doi.org/10.5931/djim.v8i2.366.
» "Mariana Islands Range Complex - SPREP." ENVIRONMENTAL IMPACT STATEMENT/ OVERSEAS ENVIRONMENTAL IMPACT STATEMENT. Commander, U.S. Pacific Fleet, Executive Agent. Accessed October 8, 2021. https://www.sprep.org/attachments/NMarianas_13b.pdf. In accordance with The National Environmental Policy Act and Executive Order 12114
» Mitchell, Jon. Poisoning the Pacific: The US Military's Secret Dumping of Plutonium, Chemical Weapons, and Agent Orange. Lanham, MD: Rowman & Littlefield, 2020.
» "Munitions Response Programs (MMRP's)." Underwater Munitions, July 10, 2013. https://underwatermunitions.org/pdf/overview_MMRP.pdf.
» Page, Official U.S. Navy. "Sailor Conducts a SeaBotix Remotely Operated Vehicle during Sri Lanka Humanitarian Mine Action Mission." Official U.S. Navy Page | Flickr, September 1, 2016. https://www.flickr.com/photos/usnavy/28762022983/.
» Prifiharni, Siska, Lutviasari Nuraini, Gadang Priyotomo, Sundjono, Hadi Gunawan, and Ibrahim Purawiardi. "Corrosion Performance of Steel and Galvanized Steel in Karangsong and Limbangan Sea Water Environment," 2018. https://doi.org/10.1063/1.5038320.
» Proffitt, James. "Unexploded Ordnance: Lake Erie Shoreline Site of Long-Term Munitions Study." Unexploded Ordnance: Lake Erie shoreline site of long-term munitions study. Great Lakes Now, January 7, 2021. https://www.greatlakesnow.org/2021/01/unexploded-ordnance-lake-erie-shoreline-site-munitions-study/.
» "SNMCMG1 Completes Historical Ordnance Disposal Operations in France." NATO | OTAN, August 24, 2021. https://mc.nato.int/media-centre/news/2021/snmcmg1-completes-historical-ordnance-disposal-operations-in-france.