

Mine Action and the Environment¹

The 'Triple vulnerability' - Climate, Conflict and Contamination; the humanitarian implications of intersecting climate, conflict risk and contamination from mines and UXOs².

There has been a lively debate on the relationship between climate, climate change, and conflict amongst academic scholars, and yet, there is still no agreement on how or why climatic variables matter for violence. This debate is important, however, when interrogating mine action and the environment, I am cognisant to the fact that many of the countries that top the list of the most vulnerable or least prepared to adapt to the negative impact of climate change according to the ND-GAIN measure are either already in conflict or are recovering from episodes of conflict; (Somalia, Chad, Eritrea, CAR, DRC, Sudan, Afghanistan, Zimbabwe, Myanmar, Ethiopia, Angola, Mozambique)³. Therefore, for purposes of mine action and the environment, my point of departure is the acknowledgment that contamination occurs or is present in contexts of conflict or post conflict environments. Thus, I centre my reflections on the interaction endured by communities living in contexts of environmental challenges in conflicting and post conflict societies - desisting from the debates on whether environmental challenges do cause conflict. Instead the challenge that I confront is the extent to emerging environmental challenges and mine contamination act as a threat multiplier for communities and thereby compounding the vulnerabilities of societies that already have weakened adaptive capacities. Political challenges are already interacting with other complex societal dynamics to either prolong ongoing conflict, exacerbate the conflict or impact on conflict mitigation opportunities. For societies that are at the brink of conflict, such challenges can contribute to the increase in their vulnerability thereby tipping them into full blown conflicts.

Findings by conflict studies scholars indicate that post conflict societies, are most likely to experience its reoccurrence. Therefore in such societies, while, climate related challenges are not the single motivating causes for this reoccurrence; it is believed that these do interact with other social, economic and political factors to heighten the risk of return to conflict especially due to political instability at crucial post conflict

¹ Paper presented by Dr Sarah Njeri, - African Leadership Centre, King's College London for the **23rd International Meeting of Mine Action National Directors and UN Advisers (NDM-UN23)** will be held from 11 to 14 February **2020** at the **United Nations** Office at Geneva. This paper is a preliminary exploration of the interaction of Mine Action and the Environment, the author will be undertaking further research on specific case studies - so for further clarification and/or more information, please contact her via Sarah.Njeri@KCL.AC.UK

² This title is informed and borrows from a paper by Peters, K. and Mayhew, L *et al* (2019) **Double vulnerability: the humanitarian implications of intersecting climate and conflict risk**, Working and discussion papers March 2019

³For reference please see <https://gain.nd.edu/our-work/country-index/> accessed on 13/02/2020

moments. Thus, for many post conflict and conflict communities, the direct impact of climate related challenges doubles the society's vulnerability.

Interaction of mine contamination and the environment

For such countries for example Afghanistan, Angola, Yemen, Chad, Iraq, Ethiopia, Zimbabwe, Eritrea, Somalia, Sudan, South Sudan, DRC and Niger, that are also mine contaminated, complexities and vulnerabilities are more dire because majority of largely depend on agriculture and or livestock for livelihood; therefore, their resilience is weakened as food security is threatened thereby aggravating the humanitarian conditions.

Thus, in contexts where communities are impacted by challenges such as drought, mines and uxo contamination adds to the complexities of the existing conditions for such communities compromising their resilience. Landmines cause land degradation; through access denial, loss of biodiversity, presence of toxic explosives; damage to the soils' stability by shattering the soil structure, and causing local compaction, thereby increasing the susceptibility of soil to erosion. Thus, **contamination** introduces a **third level** of vulnerability to **conflict and climate vulnerable** communities by interacting with the ecosystem leading to further environmental degradation; increasing food insecurity, challenging humanitarian operations etc.

For example;

- In the context of diminishing agricultural lands due to climatic change leading to drought, blockage of the decreasing viable farm land due to contamination of landmines and other unexploded ordnances ensures a continuation of violence through injury, fear, and increase to the vulnerability of communities that are food security poor. Contamination adds to the complexity of accessing this communities that are under the control of groups such as the Boko Haram; the presence of mines further contributes to environmental degradation.
- Sporadic and severe drought raises the impetus for water rights, especially rights of access and control of the Nile. Within an ongoing internal conflict exacerbated by Sudan's vulnerability to drought in the Darfur region, and a complex and often hostile political environment, there is also a significant contamination from mines and explosives that compound the challenge for UNAMID peacekeepers seeking to deliver humanitarian aid, to communities caught up in this conflict.
- The Sahel region faces many complex and interconnected challenges and drought is one the biggest risk to several the countries for example Niger's agricultural and pastoral sectors, whilst in Mali drought hotspots are in its pasturelands. Droughts and desertification are the main environmental issues facing Burkina Faso and have historically impacted agricultural activities, population distribution, and the economy. Yet again, mine contamination adds complexity in an already protracted conflict and humanitarian emergency in the region that sees conflict spreading into neighbouring areas.

- Agriculture in Afghanistan is the second largest sector of the economy. Agricultural labour is critical for livelihoods however, through degradation and abandonment (due to mines among other reasons) there has been an annual decline of agricultural production over time. the percentage of cultivatable land that is productive has therefore declined. The worse is yet to come according to experts.
- Angola is rebuilding its country after years of war, and mine contamination has a drastic effect on access to agricultural land, which in turn affects the livelihoods and food security in the communities. While communities have benefitted from increase in arable land from demining - recent drought has reduced the variety of cultivated crops.

To describe the causal link of landmine-induced land degradation with development one can give the examples of deforestation and landmine effects on animal migration. Deforestation has been accelerated by extensive use of landmines. Where arable and pasture lands have been mined to such a degree that forests become the only source of livelihood, the long-term consequences of selling old forests and fruit trees gives way to immediate survival pressures. Cascading effects from deforestation can affect the surrounding areas.

Thus, in such contexts - and others not highlighted - climatic changes have contributed to droughts, therefore continually acting as a threat multiplier amplifying pre-existing vulnerabilities; because of their dependence on agriculture, the presence of mines and uxos further increases the vulnerability and reduces the resilience of these communities potentially leading to either sustaining the conflict or causing conflict to re-occur. Evidently, climatic changes and environmental degradation causes of environmental degradation, could make armed conflict more likely.

There has been relatively little attention that includes the intersection of environmental challenges and presence of mines and UXOs on complex, multi-layered conflicts, such as those in Afghanistan, Mali, Somalia and Darfur, which more frequent communal conflicts linked to ethnic and clan-based identities are demanding increased attention and resources from peacebuilding actors to try to prevent this violence from spilling over to the national level.

How has research on mine action linked to environment? Responses thus far and emerging discourse

There have been several studies⁴ that have previously linked mine action and the environment however, this has been largely been limited to ways in which the presence of contamination has contributed to environment and landscape degradation. So, there are some evidence that the sector can draw on in further engaging in the linkage while also examining how to move the discussion forward in a meaningful way to better inform responses and programmes. The Landmine Monitor

⁴ The list of academic research provided here **is not** a comprehensive list it is just an indicative list. Due to the nature of this presentation, a comprehensive list was not possible.

in 2000 spearheaded this discussion through an appendix in which it called for the need of a strong global environmental impact assessments, and the need for multilateral and organizational cooperation in the creation of a Minimum Environmental Standard to be implemented by States Parties to MBT⁵.

Previously In 2007, Eniang, Haile and Yihdego⁶ published a paper on the impacts of landmines on the Environment and Biodiversity in the Tigray region of Ethiopia. The article sought to demonstrate the conservation impacts of landmines in order to draw attention to the need for the protection of the Kafta Humera Wildlife Reserve, North Western Tigray, Ethiopia, thereby drawing the attention of all stakeholders to its conservation needs.

Berhe⁷ in the same year also, published the results of a research project that was quite comprehensive in its examination to the contribution of landmines to land degradation. The project identified 5 ways in which landmines caused land degradation; through access denial, loss of biodiversity, micro-relief disruption i.e. (the way in which detonation causes damage to the soils' stability by shattering the soil structure, and causing local compaction, and increasing the susceptibility of soil to erosion), chemical contamination, and loss of productivity. The study introduced the discussion on the complexity of the landmine-instigated ecological problem due to its principal after-effects, and processes and relationships that bring about land degradation and regional under-development. His conclusions were rather reflecting the discussion today, that landmine effects are experienced in environments already experiencing effects of wars, unfavourable climatic and economic conditions, and governments' uncertain commitment to the environment.

In 2008 there were more specific studies⁸ on mine action and the environment in the Journal of Mine Action focused in which they called a renewed focus on these issues and for a comprehensive approach, linking other humanitarian efforts with mine action. Other studies are more specific in the focus on examining the interaction of mines especially the explosive components within and their impact or effect on soil.

A recent publication by Hamad and colleagues⁹, examined 'Land Cover Changes Induced by Demining Operations in Halgurd-Sakran National Park in the Kurdistan Region of Iraq'. The researchers established that pasture and cultivated areas continued to shrink due to mine clearance operations from 1998 to 2015 inside in the

⁵ Landmine Monitor 2000

⁶ ENIANG, E. A., A. HAILE and T. YIHDEGO, "Impacts of landmines on the environment and biodiversity", Environmental Policy and Law, vol. 37, No. 6 (2007)

⁷ Berhe, A.A., 2007. The contribution of landmines to land degradation. *Land Degradation & Development*, 18(1), pp.1-15.

⁸ See for example Morin, Anthony (2008) "Demining and the Environment: A Primer," *Journal of Mine Action* : Vol. 11 : Iss. 2 , Article 13. McLean, Ian and Sargisson, Rebecca (2008) "Global Environmental Demining Issues," *Journal of Mine Action* : Vol. 11 : Iss. 2 , Article 14.

⁹ Hamad, R.; Kolo, K.; Balzter, H. Land Cover Changes Induced by Demining Operations in Halgurd-Sakran National Park in the Kurdistan Region of Iraq. *Sustainability* 2018, 10, 2422.

Halgurd-Sakran Core Zone concluding that mine clearance activities exposed the soil and accentuated natural erosional processes such as wind and rain during the mechanical clearance, which led to soil loss and accelerated soil erosion in restricted landmine fields. They concluded that changes in land reduced the potential of the productivity.

The Geneva International Centre for Humanitarian Demining¹⁰ published a paper titled "*Do No Harm in Mine Action: Why the Environment Matters?*" In which the authors multi-temporal analysis of impact indicators can then help monitor the effect of mitigation activities. The authors identify ways in which the environment can also be affected indirectly by mine contamination. They also identify measures that can be taken to reduce the harm and negative impact from clearance operations including a comprehensive environmental assessment in the planning for any clearance activity and Identifying land use at a planning stage after mechanical clearance amongst other issues.

While attention for this discourse has been growing, and as illustrated, an attempt by academics in engaging in exploration of how mines on the ground impact of the environment, there has been relatively limited attention to the humanitarian implications of these changing risks. Research that links mine action specifically and the environment are far and in between. This is not specific to mine action. Environmental priorities have remained largely absent from post conflict peacebuilding and humanitarian development policies especially in the context of competing humanitarian imperatives, thus environmental considerations are not always prioritised.

While the Mine Action sector in general has made leaps of progress in engaging and working in complex and challenging contexts, more can still be done, through incorporating innovative approaches where possible. This can be done through transforming mine action to become an environmental-compatible activity that is fit for the reality that communities are experiencing today. Mine action should increasingly pay attention to environmental challenges, thus avoiding further harm but most importantly to support communities mitigate some of impact. This can be done through;

- a) ***Adapting mine action responses to compounded climate and conflict risks;*** while the mine action sector does try to understand the conflict dynamics in vulnerable context that they operate in, without considering the impact of environmental challenges that the societies are facing today face, such an analysis would be incomplete and flawed.
- b) ***Working collaboratively with different sectors including Academia;*** In the context of competing needs, the mine action sector needs to be innovative in

¹⁰ Hoffman, Ursin, and Pascal Rapillard. "Do no harm in mine action: Why the environment matters." *J. Conv. Weapons Destr* 19 (2015): 13.

how they engage with other sectors to leverage their vantage positions of access to communities. Collaborative ventures with academia (that is currently looking into impact driven research), could help tap on resources such as research funding to help generate policy relevant research that can inform their own programmes.

- c) ***An integrated response to communities***; identifying better ways to navigate between competing demands using integrated response strategies. Instead of being guided purely by possible risks, the sector can/should proactively identify ways in which they can support communities. **An integrated approach to mine action provides a continued opportunity for incorporating and integrating wider development and reconstruction responses (from actors including donors) that have far reaching economic benefits for societies. For example, a recent study by the GICHD in which I was part of, established that there are efforts to unlock the economic potential in eco-tourism and conservation economy in Angola.** However, with mine clearance increasing access and availability of land for agriculture has meant that some of the communities are now employing the slash and burn agriculture practises to clear land for crops - this is of concern when looking at the broader national picture viz a viz conservation - and tourism. It is therefore important the local populations are educated on the importance of Angola's heritage and conservation and their role in it. This includes the importance of sustainable agriculture practices. Failure to do this, will mean further harm to biodiversity and the environment. Therefore, responses in Angola whether they are mine action related or otherwise need an integrated approach that is coherent at the local, regional and national level.
- The same approach can be used for example in response to the Tigray region of Ethiopia is a vast sensitive and fragile dryland area with great potential for biodiversity conservation, ecotourism and agricultural development. Despite the risk of landmines especially in the war-affected areas, all efforts must be made to de-mine the reserve. This will ensure the conservation of the Kafta Humera wildlife reserve for obvious environmental and conservation as well as social benefits.
 - An integrated approach can mean incorporating engagement with communities to promote agroforestry, integrated farming and practices that promote vegetation cover are sustainable land practices during MRE or assessment sessions.
 - Current prioritisation strategies do not consider adequately consider the interdependence between conflict legacy, social vulnerability and development options. Hence, there needs to be a paradigm shift towards understanding and

considering the underlying vulnerabilities of people living in contexts of mine/ERW affected areas that are susceptible to further impact from environmental degradation.

- d) **Innovative approaches that can bring new knowledge;** Learning from other sectors for example the humanitarian sector has also been exploring new means to act early and build resilience, through tools, innovations and ideas such as forecast-based finance, shock responsive programming, resilience-building, preparedness, cash transfer programming and insurance; there are opportunities for mine action to tap on such processes in communities where they operate.
- e) **Combine and integrate different methodologies to determine prioritisation;** Working towards incorporating the use of spatial approaches such as those used in humanitarian crises or disaster risk reduction in combination with data on vulnerabilities to climate change to prioritise mine action activities? The capabilities of Geographic Information Systems (GIS) in the context of humanitarian action?
- f) **'climate-compatible mine action'** The increasing likelihood of dramatic impacts from climate change has led to a growing call for 'climate-compatible action' in the development, humanitarian and security domains as suggested by Clarke, M. and de Cruz, I¹¹. As suggested, a climate-compatible approach seeks to encourage the humanitarian system to manage climate impacts and adapt to future changes a similar approach could be enlisted for mine action. This would ensure vulnerabilities in already highly vulnerable communities are not exacerbated. The mine action sector could undertake climate risk assessments to better identify vulnerabilities, and therefore prioritise such communities or as proposed for humanitarian responses, align their responses with climate adaptation plans, national economic development plans and (where they exist) post-conflict recovery plans. A response that has been referred to as 'climate proofing' within development programmes. This is where organisations systematically assess climate risks and opportunities in development planning and to help identify and prioritise necessary responses.¹²

Conclusion

Evidence suggesting that conflict occurs as a direct result of climate related or climate-sensitive factors is contested; I do not seek to make a direct connection however,

¹¹ Clarke, M. and de Cruz, I., 2015. A climate-compatible approach to development practice by international humanitarian NGOs. *Disasters*, 39(s1), pp.s19-s34.

¹² Alexander Fröde, Michael Scholze & Nadia Manasfi (2013) Taking a climate perspective on development: GIZ's climate proofing for development approach, *Climate and Development*, 5:2, 160-164, DOI: [10.1080/17565529.2012.751894](https://doi.org/10.1080/17565529.2012.751894)

some evidence of indirect links and mediating factors between climate change, therefore environmental degradation and therefore increased vulnerability to conflict is valid.

A recent paper by the Overseas Development Institute (ODI)¹³ suggested that while discussions around the climate–security-peace intersection have been led primarily by foreign and security policy-makers – especially European and US agencies and think tanks – suggests that it would be helpful to hear a stronger voice from humanitarians and others who can share local lived experiences to expand the evidence base to help avoid an overly simplistic formulations. Doing so may also help develop a pro-poor narrative to the challenge. The mine action sector is best placed to contribute to this.

¹³ Peters, K. and Mayhew, L *et al* (2019) **Double vulnerability: the humanitarian implications of intersecting climate and conflict risk**, Working and discussion papers March 2019