

Submission to the State Parties to the Arms Trade Treaty Regarding Environmental Destruction as War Crimes in the Situation in Gaza February 21, 2024

This submission is prepared to assist States Parties in considering the application of Article 6 of the Arms Trade Treaty (“the Treaty”) to the transfer of arms to Israel in connection with hostilities currently underway in Gaza. While the atrocities committed directly against the civilian population in Gaza are of great relevance to States Parties to the Treaty, this submission restricts itself to consideration of environmental war crimes, as a complement to the larger discussion.

Article 6(3) of the Treaty prohibits a State Party from transferring conventional arms covered by the Treaty if it has knowledge at the time of authorization that the arms or items would be used in the commission of war crimes, including grave breaches of the Geneva Conventions, attacks against civilian objects, and “other war crimes as defined by international agreements to which it is a Party”.¹ This submission focuses on environmental damage rising to the level of war crimes reportedly inflicted by Israeli forces in the ongoing armed conflict in Gaza. These fall into three categories: (1) attacks against civilian objects; (2) indiscriminate or disproportionate attacks; and (3) starvation as a method of warfare. The stated intention of the Israeli authorities to continue the current pattern of hostilities puts States Parties on notice that arms transferred to Israel will continue to be used to commit these crimes.

1. Attacks Intentionally Directed against Civilian Objects

The environment is a civilian object. According to Additional Protocol I to the Geneva Conventions of 1949 (AP I), civilian objects are all objects which are not military objectives. Military objectives are objects which “by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction, capture, or neutralization, in the circumstances ruling at the time, offers a definite military advantage”.² In case of doubt whether an object that is normally dedicated to civilian purposes is being used to make an effective contribution to military action, it shall be presumed not to be so used.³ This definition has been accepted as a rule of customary international law in both international and non-international armed conflicts.⁴

It is generally accepted that the natural environment is civilian in character.⁵ On this basis, the International Committee of the Red Cross (ICRC) customary law study establishes as a norm of customary international law applicable in both international and non-international armed conflicts that:

- No part of the natural environment may be attacked, unless it is a military objective.

¹ Arms Trade Treaty (ATT), Art. 6(3).

² Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (AP I), June 1977, Art. 52.

³ Ibid.

⁴ ICRC Database, Customary IHL, Definition of Civilian Objects, https://ihl-databases.icrc.org/en/customary-ihl/v1/rule9#refFn_B76464B4_00001 (Last accessed on February 19, 2024).

⁵ ICRC, Guidelines on protection of natural environment in armed conflict (2020), p. 19-21, <https://shop.icrc.org/guidelines-on-the-protection-of-the-natural-environment-in-armed-conflict-pdf-en.html>.

- Destruction of any part of the natural environment is prohibited, unless required by imperative military necessity.⁶

Attacks directed against civilian objects, including the environment, are war crimes.⁷ In Gaza, the Israeli attacks have specifically targeted farmland and plantations, orchards and olive groves. An estimated 22% of agricultural land, including numerous olive orchards, has been destroyed since the start of the conflict.⁸ Human Rights Watch found orchards and farmland in northern Gaza to have been “systematically” razed.⁹

The effects of these war crimes are long-lasting. In addition to the immediate danger to civilians in the area, the attacks threaten the entire ecosystem. The destruction of vegetation such as olive trees and various crops leads to desertification and deforestation,¹⁰ which in turn affects animal species and biodiversity. For example, numerous bird species rely on the biodiversity provided by Palestine’s wild trees olive trees, six species of which are often found in native olive groves.¹¹ The scale of bombardment also leads to long-term effects on the ecosystem through soil contamination.¹²

2. Indiscriminate and Disproportionate Attacks

Indiscriminate attacks violate the fundamental principle of distinction in customary international law and constitute war crimes.¹³ Such attacks include (a) those which are not directed at a specific military objective; (b) those which employ a method or means of combat which cannot be directed at a specific military objective; or (c) those which employ a method or means of combat the effects of which cannot be limited as required by IHL.¹⁴

⁶ ICRC Database, Customary IHL, Application of General Principles on the Conduct of Hostilities to the Natural Environment, <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule43> (Last accessed on February 20, 2024).

⁷ AP I, Art. 85; and Rome Statute of the International Criminal Court (Rome Statute), 1998, Arts. 8(b)(ii) and 8(e)(xii).

⁸ Guillaume Maurice, *In Gaza, 'an estimated 22% of agricultural land' has been destroyed since the start of the conflict*, FRANCE 24 OBSERVER, December 12, 2023, <https://observers.france24.com/en/middle-east/20231212-in-gaza-an-estimated-22-of-agricultural-land-has-been-destroyed-since-the-start-of-the-conflict>.

⁹ Twitter (X) thread by Human Rights Watch on December 4, 2023, https://twitter.com/hrw/status/1731689458695655770?ref_src=twsrc%5Etfw%7Ctwcamp%5Etweetembed%7Cwtterm%5E1731689458695655770%7Ctwgr%5E625c33a56698adc80907cc30f0cf45d194ec8bb7%7Ctwcon%5Es1_%ref_url=https%3A%2F%2Ftoday.lorientlejour.com%2Farticle%2F1359638%2Fisraeli-army-razed-agricultural-land-during-truce-hrw-reports.html, and *Israel: Starvation Used as Weapon of War in Gaza*, HUMAN RIGHTS WATCH, December 18, 2023, <https://www.hrw.org/news/2023/12/18/israel-starvation-used-weapon-war-gaza>.

¹⁰ Sara J. Faqir, *As Gaza carnage mounts, concerns spike over environmental war crimes*, THE JORDAN TIMES, October 18, 2023, <https://jordantimes.com/news/local/gaza-carnage-mounts-concerns-spike-over-environmental-war-crimes%C2%A0>.

¹¹ Joshua Frank, *The Killing of Gaza’s Environment: Or How to Create an Unlivable Hellscape on One Strip of Land*, TOM DISPATCH, January 11, 2024, <https://tomdispatch.com/the-killing-of-gazas-environment/>.

¹² Guillaume Maurice, *In Gaza, 'an estimated 22% of agricultural land' has been destroyed since the start of the conflict*, FRANCE 24 OBSERVER, December 12, 2023, <https://observers.france24.com/en/middle-east/20231212-in-gaza-an-estimated-22-of-agricultural-land-has-been-destroyed-since-the-start-of-the-conflict>.

¹³ ICRC Database, Customary IHL, The Principle of Distinction between Civilian Objects and Military Objectives, <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule7> and ICRC Database, Customary IHL, Indiscriminate Attacks, <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule11> (Last accessed on February 20, 2024).

¹⁴ AP I, Art. 51(4) and ICRC Database, Customary IHL, ICRC Database, Customary IHL, Definition of Indiscriminate Attacks, <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule12> (Last accessed on February 20, 2024).

Disproportionate attacks, which violate the fundamental principle of proportionality in customary international law, are also war crimes.¹⁵ Customary international law prohibits launching an attack against a military objective which may be expected to cause incidental damage to the environment which would be excessive in relation to the concrete and direct military advantage anticipated, in both international and non-international armed conflicts.¹⁶

The prohibition on methods or means of warfare which are intended or may be expected to cause widespread, long-term and severe damage to the natural environment is absolute.¹⁷ This means that the use of such means or methods can never be proportionate.

Use of White Phosphorus

According to Human Rights Watch's analysis of video footage and witness interviews, Israel used airburst 155 mm white phosphorus artillery projectiles over the Gaza City port on October 11, 2023.¹⁸ Amnesty International also documented the use of white phosphorus artillery shells by the Israeli army in densely populated civilian areas in Gaza in October 2023.¹⁹ While fully cognizant of the unacceptable direct and severe harm that white phosphorus can cause human beings, which has been covered by others, this submission focuses on environmental effects. The effects of the use of white phosphorus in these circumstances on the natural environment show that these actions amount to the war crimes of indiscriminate and disproportionate attacks.

a. Indiscriminate attack

It is impossible to protect the natural environment from the effects of airburst white phosphorus artillery projectiles. The smokescreen from white phosphorus damages plants, kills animals and contaminates air, soil, and water (see more on impact below). The use of such artillery is therefore indiscriminate: its effects cannot be limited as required by IHL.

b. Disproportionate attack

White phosphorus is generally used to mask military operations on the ground. However, the harm caused to the environment of using airburst white phosphorus outweighs any military advantage. White phosphorus contaminates (drinkable) water, both directly²⁰ and indirectly through the water

¹⁵ ICRC Database, Customary IHL, Proportionality in Attack, <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule14> (Last accessed on February 20, 2024). See also AP I, Art. 85 and Rome Statute, Art. 8(2)(b)(iv).

¹⁶ ICRC Database, Customary IHL, Rule 43: Application of General Principles on the Conduct of Hostilities to the Natural Environment, <https://ihl-databases.icrc.org/en/customary-ihl/v1/rule43> (Last accessed on February 20, 2024).

¹⁷ AP I, art. 35; ICRC Database, Customary IHL, Rule 45.

¹⁸ *Israel: White Phosphorus Used in Gaza, Lebanon*, HUMAN RIGHTS WATCH, October 12, 2023, <https://www.hrw.org/news/2023/10/12/israel-white-phosphorus-used-gaza-lebanon>.

¹⁹ *Israel/OPT: Identifying the Israeli army's use of white phosphorus in Gaza*, AMNESTY INTERNATIONAL, October 13, 2023, <https://amnesty.ca/human-rights-news/israel-opt-identifying-the-israeli-armys-use-of-white-phosphorus-in-gaza/>.

²⁰ Zeinab Shuker, *War Has Poisoned Gaza's Land and Water. Peace Will Require Environmental Justice*, THE CENTURY FOUNDATION, December 19, 2023, <https://tcf.org/content/commentary/war-has-poisoned-gazas-land-and-water-peace-will-require-environmental-justice/> and *How Israel's blockade of Gaza created an environmental catastrophe*, THE NEW ARAB, October 24, 2023, <https://www.newarab.com/features/israels-blockade-gaza-creates-environmental-crisis>.

cycle via the atmosphere as it leads to acid rain.²¹ With increased chances of acid rain, those who collect rainwater to drink directly, especially amid a shortage of drinking water, could be particularly at risk.²² Moreover, according to the U.S. Agency for Toxic Substances and Disease Registry, white phosphorus can degrade in low-oxygen water to a highly toxic compound called phosphine; it can also build up in fish that lived in contaminated water bodies. White phosphorus that pollutes water also poisons marine life²³ and impacts the fishing industry.²⁴

The fires from white phosphorus spread rapidly and uncontrollably, while releasing toxic fumes into the air, harmful to humans and other living organisms.²⁵ In soil, white phosphorus can increase erosion and burn down vegetation and agricultural land.²⁶ It also reduces soil fertility as it can disrupt soil composition, making it too acidic to grow crops²⁷ and causing destruction to plants and the entire ecosystem.²⁸ In deep soil or sediments with little oxygen, white phosphorus may remain unchanged for years.²⁹ For living organisms, the use of white phosphorus harms not only humans but also plants and animals,³⁰ as it can burn both thermally and chemically, and inhalation of the smoke can cause respiratory problems.

²¹ ToxFAQs™ for White Phosphorus, U.S. Agency for Toxic Substances and Disease Registry, <https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=284&toxid=52>.

²² Indlieb Farazi Saber, *Is Israel's Gaza bombing also a war on the climate?*, AL JAZEERA, December 5, 2023, <https://www.aljazeera.com/news/2023/12/5/is-israels-war-on-gaza-also-hurting-the-climate>.

²³ Zeinab Shuker, *War Has Poisoned Gaza's Land and Water. Peace Will Require Environmental Justice*, THE CENTURY FOUNDATION, December 19, 2023, <https://tcf.org/content/commentary/war-has-poisoned-gazas-land-and-water-peace-will-require-environmental-justice/>, and Mohammed Soulaïman, *Rivers of sewage, dirty water and toxic air: The environmental disaster unfolding in Gaza*, EURONEWS, December 20, 2023, <https://www.euronews.com/green/2023/12/20/rivers-of-sewage-dirty-water-and-toxic-air-the-environmental-disaster-unfolding-in-gaza>.

²⁴ Wim Zwijnenburg & Natasha Hall, *Uninhabitable? The reverberating public health and environmental risks from the war in Gaza*, PAX, December 2023, https://paxforpeace.nl/wp-content/uploads/sites/2/2023/12/PAX_Report_Gaza_Uninhabitable_FIN.pdf.

²⁵ Muhammad Abdullah, *White Phosphorus Bombing in Gaza: Environmental and Potential Impacts*, MEDIUM, October 23, 2023, <https://medium.com/@environ202/white-phosphorus-bombing-in-gaza-environmental-and-potential-impacts-fbdc928ddd45>.

²⁶ *Id.*; Zeinab Shuker, *War Has Poisoned Gaza's Land and Water. Peace Will Require Environmental Justice*, THE CENTURY FOUNDATION, December 19, 2023, <https://tcf.org/content/commentary/war-has-poisoned-gazas-land-and-water-peace-will-require-environmental-justice/>; and Emma Pearce, *Israel's ecocide is contributing to the forcible displacement of Gazans*, OPEN GLOBAL RIGHTS, February 9, 2024, <https://www.openglobalrights.org/israel-ecocide-contributing-to-forcible-displacement-gazans/>.

²⁷ *The killing of Gaza's environment*, DIEM25, January 12, 2024, <https://diem25.org/the-killing-of-gazas-environment/>; and *How Israel's blockade of Gaza created an environmental catastrophe*, THE NEW ARAB, October 24, 2023, <https://www.newarab.com/features/israels-blockade-gaza-creates-environmental-crisis>.

²⁸ Zeinab Shuker, *War Has Poisoned Gaza's Land and Water. Peace Will Require Environmental Justice*, THE CENTURY FOUNDATION, December 19, 2023, <https://tcf.org/content/commentary/war-has-poisoned-gazas-land-and-water-peace-will-require-environmental-justice/>, and Emma Pearce, *Israel's ecocide is contributing to the forcible displacement of Gazans*, OPEN GLOBAL RIGHTS, February 9, 2024, <https://www.openglobalrights.org/israel-ecocide-contributing-to-forcible-displacement-gazans/>.

²⁹ ToxFAQs™ for White Phosphorus, U.S. Agency for Toxic Substances and Disease Registry, <https://wwwn.cdc.gov/TSP/ToxFAQs/ToxFAQsDetails.aspx?faqid=284&toxid=52>.

³⁰ *The killing of Gaza's environment*, DIEM25, January 12, 2024, <https://diem25.org/the-killing-of-gazas-environment/>; Mohammed Soulaïman, *Rivers of sewage, dirty water and toxic air: The environmental disaster unfolding in Gaza*, EURONEWS, December 20, 2023, <https://www.euronews.com/green/2023/12/20/rivers-of-sewage-dirty-water-and-toxic-air-the-environmental-disaster-unfolding-in-gaza>; and Zeinab Shuker, *War Has Poisoned Gaza's Land and Water. Peace Will Require Environmental Justice*, THE CENTURY FOUNDATION, December 19, 2023, <https://tcf.org/content/commentary/war-has-poisoned-gazas-land-and-water-peace-will-require-environmental-justice/>.

Such harm is further amplified by the way Israel used white phosphorus – according to Human Rights Watch, “[a]irbursting of white phosphorus projectiles spreads 116 burning felt wedges impregnated within the substance over an area between 125 and 250 meters in diameter, depending on the altitude of the burst, thereby exposing more civilians and civilian structures to potential harm than a localized ground burst.”³¹

These disproportionate harms to the natural environment make the use of white phosphorus in these circumstances a war crime.

3. Starvation as a Method of Warfare

Starvation as a method of warfare is considered a war crime in both international and non-international armed conflicts.³² Corollary to this rule is the prohibition on attacking, destroying, removing, or rendering useless objects indispensable to the survival of the civilian population, which is a norm of customary international law applicable in both international and non-international armed conflicts.³³

Since October 7, 2023, Israel has greatly limited the water supply in Gaza by (1) cutting off or greatly reducing the flow of water imported to Gaza via pipelines on which Gaza’s water supply is heavily dependent;³⁴ (2) conducting intense aerial and artillery bombardment that damaged much of Gaza’s water infrastructure;³⁵ (3) greatly limiting the electricity and fuel which provide energy for pumping water from Gaza’s coastal aquifer;³⁶ and (4) flooding underground tunnels that can quickly pollute

³¹ *Israel: White Phosphorus Used in Gaza, Lebanon*, HUMAN RIGHTS WATCH, October 12, 2023, <https://www.hrw.org/news/2023/10/12/israel-white-phosphorus-used-gaza-lebanon>.

³² ICRC Database, Customary IHL, Starvation as a Method of Warfare, https://ihl-databases.icrc.org/en/customary-ihl/v1/rule53#Fn_91359A25_00010 (Last accessed February 20, 2024); Rome Statute, Art. 8(2)(b)(xxv); AP I, Art. 54; and Protocol Additional to the Geneva Conventions of 12 August 1949, and Relating to the Protection of Victims of Non-International Armed Conflicts (AP II), June 1977, Art. 14.

³³ ICRC Database, Customary IHL, Attacks against Objects Indispensable to the Survival of the Civilian Population, https://ihl-databases.icrc.org/en/customary-ihl/v1/rule54#Fn_560A1CEA_00012 (Last accessed on February 19, 2024).

³⁴ Wim Zwijnenburg & Natasha Hall, *Uninhabitable? The reverberating public health and environmental risks from the war in Gaza*, PAX, December 2023, https://paxforpeace.nl/wp-content/uploads/sites/2/2023/12/PAX_Report_Gaza_Uninhabitable_FIN.pdf; *The killing of Gaza’s environment*, DIEM25, January 12, 2024, <https://diem25.org/the-killing-of-gazas-environment/>; and Zeinab Shuker, *War Has Poisoned Gaza’s Land and Water. Peace Will Require Environmental Justice*, THE CENTURY FOUNDATION, December 19, 2023, <https://tcf.org/content/commentary/war-has-poisoned-gazas-land-and-water-peace-will-require-environmental-justice/>.

³⁵ Zeinab Shuker, *War Has Poisoned Gaza’s Land and Water. Peace Will Require Environmental Justice*, THE CENTURY FOUNDATION, December 19, 2023, <https://tcf.org/content/commentary/war-has-poisoned-gazas-land-and-water-peace-will-require-environmental-justice/>. Repairing water pipelines also requires necessary resources, safety conditions, supplies, and skilled personnel that the situation in Gaza may not provide. *Palestine: Not enough water to survive*, NORWEGIAN REFUGEE COUNCIL, November 3, 2023, <https://www.nrc.no/news/2023/november/not-enough-water-to-survive/>.

³⁶ Wim Zwijnenburg & Natasha Hall, *Uninhabitable? The reverberating public health and environmental risks from the war in Gaza*, PAX, December 2023, https://paxforpeace.nl/wp-content/uploads/sites/2/2023/12/PAX_Report_Gaza_Uninhabitable_FIN.pdf; *The killing of Gaza’s environment*, DIEM25, January 12, 2024, <https://diem25.org/the-killing-of-gazas-environment/>; Zeinab Shuker, *War Has Poisoned Gaza’s Land and Water. Peace Will Require Environmental Justice*, THE CENTURY FOUNDATION, December 19, 2023, <https://tcf.org/content/commentary/war-has-poisoned-gazas-land-and-water-peace-will-require-environmental-justice/>; and Rozina Kanchwala, *Solar Panels in Gaza Can’t Withstand Bombs*, COMMON DREAMS, January 18, 2024, <https://www.commondreams.org/opinion/solar-panels-gaza-bombs>.

Gaza's already scarce and vulnerable groundwater supplies with salt brine.³⁷ As a result, the UN indicated in December 2023 that most people in Gaza were living on one to three liters of water per day, significantly lower than the international emergency threshold of 15 liters/day.³⁸

Importantly, the lack of clean water disproportionately affects women. Adequate water intake (along with a healthy diet) is critical to nursing mothers to produce enough milk for their babies; using baby formula is also a struggle with a lack of clean water.³⁹ Additionally, "women and girls face challenges managing menstruation hygienically and with dignity, prompting many to use menstrual products for longer than intended, escalating infection dangers".⁴⁰ Female-led households (as well as the elderly and people with disabilities) also face much greater challenges in accessing scarce water supplies far from their place of displacement.⁴¹

The above measures by Israel amount to attacking, destroying, removing, or rendering useless objects critical to providing clean water, which are indispensable to the survival of the civilian population in Gaza, and constitute the war crime of starvation.

Conclusion

Since October 7, 2023, the armed conflict in Gaza has seen staggering numbers of civilian casualties; the environmental destruction resulting from the conflict is also severe. In its conduct of hostilities, Israel has carried out intentional as well as indiscriminate and disproportionate attacks against the environment, a civilian object, and used starvation as a method of warfare by destroying, attacking, and rendering useless objects that supply water, which is indispensable to the survival of the civilian population. These actions amount to war crimes. Knowledge of these facts should prohibit States Parties from transferring arms to Israel, in accordance with Article 6(3) of the Treaty.

³⁷ Emanuel Fabian, *IDF confirms flooding Hamas tunnels in Gaza with seawater*, TIMES OF ISRAEL, January 30, 2024, <https://www.timesofisrael.com/idf-confirms-flooding-hamas-tunnels-in-gaza-with-seawater/>; Emma Pearce, *Israel's ecocide is contributing to the forcible displacement of Gazans*, OPEN GLOBAL RIGHTS, February 9, 2024, <https://www.openglobalrights.org/israel-ecocide-contributing-to-forcible-displacement-gazans/>; *The killing of Gaza's environment*, DIEM25, January 12, 2024, <https://diem25.org/the-killing-of-gazas-environment/>; and Tara D. Sonenshine, *An unseen tragedy of war*, THE HILL, December 9, 2023, <https://thehill.com/opinion/energy-environment/4350337-an-unseen-tragedy-of-war/>.

³⁸ *Barely a drop of safe water to drink in Gaza, UN aid agency warns*, UN NEWS, December 20, 2023, <https://news.un.org/en/story/2023/12/1144972#:~:text=But%20UNICEF%20said%20that%20recently,agency%20said%20in%20a%20statement..>

³⁹ Elena Sosa Lerín, *The Devastating Brunt Of Conflict On Gaza's Women And Girls*, OXFAM CANADA, November 25, 2023, <https://www.oxfam.ca/story/the-devastating-brunt-of-conflict-on-gaza-women-and-girls> ("Breastfeeding mothers struggle to produce milk as they're stressed and don't have enough water and food, impacting their milk production. Many newborns become so stressed by the sound of airstrikes that they cannot latch. Using baby formula is also a struggle when there isn't enough water or when the only water around is contaminated.") and Yara Asi, *Unraveling the Multi-Faceted Impact of Armed Conflict on Women in the Gaza Strip*, THE WILSON CENTER, December 10, 2023, <https://www.wilsoncenter.org/blog-post/unraveling-multi-faceted-impact-armed-conflict-women-gaza-strip> ("New mothers also face significant risks to their health and the health of their babies. Breastfeeding mothers are advised to drink at least 3 liters of water per day, along with eating a healthy diet – this is no longer an option for women in Gaza. Women report being unable to produce sufficient milk or their babies seem too stressed to nurse.").

⁴⁰ *Palestine: Not enough water to survive*, NORWEGIAN REFUGEE COUNCIL, November 3, 2023, <https://www.nrc.no/news/2023/november/not-enough-water-to-survive/>.

⁴¹ *Id.*, and *Gender Alert: The Gendered Impact of the Crisis in Gaza*, UN WOMEN, January 2024, <https://www.unwomen.org/sites/default/files/2024-01/Gender%20Alert%20The%20Gendered%20Impact%20of%20the%20Crisis%20in%20Gaza.pdf>.