



AL-HAQ



Khudair Warehouse

Israel's chemical attack on
the Gaza Strip



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1 Introduction

Since chemical weapons were first used on a major scale during the First World War, it has long been established that the use of such weapons in armed conflict is prohibited under both international treaty and international customary law.¹ Despite this prohibition, chemical weapons have been and are still used in armed conflicts around the world.² In many cases, this is through the use of conventional chemical weapons, purposely designed to deploy chemicals as a weapon, such as gas munitions.³ However, this is not the only form in which chemical weapons exist or how chemical weapons can be utilized and chemical weapons can also take the form more broadly, of toxic chemicals alone and their precursors.⁴ Today, these different forms of chemical weapons are prohibited under international law, by the Chemical Weapons Convention (1997) the primary treaty on the prohibition of chemical weapons.⁵

On 15 May 2021, at approximately 5:46 pm, the Israeli artillery shelled dozens of shells in the north western areas of the town of Beit Lahiya in the northern Gaza Strip, which led to a huge fire in the adjacent Khudair Brothers and Medawar Medicines Company, where the targeted stores contained large quantities of agricultural and plastic materials.⁶ This report examines the targeting and destruction of the Khudair Agrochemical Warehouse by the Israeli Occupying Forces (IOF) during the May 2021

1 Rule 74, ICRC customary International Humanitarian Law Database available at <Customary IHL - Rule 74. Chemical Weapons (icrc.org)> ; Hague Declaration concerning Asphyxiating Gases, 1899; Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, 1925 (Geneva Gas Protocol); Chemical Weapons Convention, Article I; Rome Statute of the International Criminal Court (last amended 2010), 17 July 1998, ISBN No. 92-9227-227-6, Article 8(2)(b)(xviii); all links in this Report were last accessed on 25/05/2022.

2 International Committee for the Red Cross, "ICRC emphasizes the prohibition of chemical weapons at 26th Conference of the States Parties to the Chemical Weapons Convention" (29 November 2021) available at: <ICRC emphasizes the prohibition of chemical weapons | ICRC>;

3 Organisation for the Prohibition of Chemical Weapons (OPCW) "What is a chemical Weapon?", available at : <What is a Chemical Weapon? | OPCW>

4 Article 2(1), Chemical Weapons Convention.

5 Ibid

6 Al-Haq, "Israeli Occupying Forces Perpetrate Widespread and Systematic Attacks Against the Civilian Palestinian Population in the Gaza Strip, the International Criminal Must Prioritise Investigation" (20 May 2021), available at: <<https://www.alhaq.org/advocacy/18381.html>>

offensive on the Gaza Strip.

Al-Haq explains how through the attack and destruction of the warehouse, the IOF acting with knowledge, created a chemical weapon via the destruction of agrochemical products. This produced a chemical cloud and leaked toxic material into the soil.⁷ Eyewitnesses reported that flames and thick black plumes of smoke rose up into the sky covering the immediate area,⁸ and that fire engines tried to put out the fire for days, but were unable to control it because of the burning of chemicals and fertilizers.⁹



A map showing the location of the warehouse in Northern Gaza – © Al-Haq Forensic Architecture Unit, 26 May 2022

- 7 For details of attack, see OCHA, “Environmental and health risk still unfolding: the bombing of Gaza’s largest agrochemical warehouse” (3 November 2021), available at: <<https://www.ochaopt.org/content/environmental-and-health-risk-still-unfolding-bombing-gaza-s-largest-agrochemical-warehouse>>
- 8 Al-Haq affidavit, “Isra Khaled “Mohammed Ali” Ghazal “Khudair” (5 October 2021), Affidavit on file with Al-Haq; PAX, “Explosive weapons and civilian harm in the Gaza conflict” (17 May 2021), available at: <<https://paxforpeace.nl/news/overview/explosive-weapons-and-civilian-harm-in-the-gaza-conflict>>
- 9 Al-Haq affidavit, Hassan Khaled Jason Gbain (5 October 2021). Affidavit on file with Al-Haq.

Evidence collected by Al-Haq and Al-Mezan field researchers, as well as the work of the Al-Haq Forensic Architecture Investigation Unit, has established that this attack by the IOF violated basic principles of international humanitarian law and human rights law, amounting to the indirect use of a chemical weapon, and satisfies the requirements for a war crime under international criminal law.

The report examines the Khudair warehouse attack from a legal perspective. First, the report will briefly remark on the relevant conflict classification in the Gaza Strip; proceed to examine Israel's history of targeting commercial structures in the Gaza Strip; before assessing the environmental protection regime in situations of armed conflict under international law. This is followed by a factual exploration of the events of the attack itself and legal analysis of the attack under the relevant provisions of international law. Finally, the report provides a list of recommendations and conclusions for the international community to address Israel's impunity and consistent violations of international law.

1.1 Apartheid and Occupation of the Gaza Strip

Approximately 70 percent of the population of Gaza are refugees internally displaced during the Nakba and denied their right of return to their homes in colonised Palestine, since 1948.¹⁰ Israel's segregation and separate treatment of Palestinians in the Gaza Strip, underpinned by its brutal closure and blockade, is part of a carefully planned and executed apartheid regime of systematic racial discrimination and domination of Israeli Jews and subjugation of the Palestinian people. According to Gaza based human rights NGO, Al-Mezan:

While the Israeli government purports to justify the closure and related restrictions under the guise of "security", [Al-Mezan] show[s] how these policies demonstrate Israel's intent to separate and divide Palestinians and re-engineer the demographics of the entire Palestinian population in order to assert its domination over them. As a sealed-off enclave, fragmented from the rest of the [Occupied Palestinian Territory] and controlled by Israel within its apartheid system, Gaza is a strip of land that can be likened to a South African bantustan.¹¹

The Gaza Strip has been under Israeli belligerent occupation for almost 55 years, following the international armed conflict between Egypt and Israel. Since the war in 1967, Israel has maintained exclusive effective control over the Gaza Strip's airspace and territorial waters, as well as maintaining full control over its buffer zone land borders, with the exception of the Rafah crossing, which is controlled by Egypt.¹² In addition to regular military incursions, Israel has launched several full scale military offensives against the Gaza Strip over the past two decades, including the 2008-2009 offensive (so-called Operation "Cast Lead") and the 2014 offensive (so-

10 Gaza in 2020: UNRWA Operational Response May 2013 – Report, available at: <<https://www.un.org/unispal/document/auto-insert-197872/>>

11 Al-Mezan, "The Gaza Bantustan: Israeli Apartheid in the Gaza Strip" (2021), available at: <http://mezan.org/uploads/upload_center/kLAkShfIAra2.pdf>

12 UN General Assembly, 'Report of the United Nations Fact Finding Commission on the Gaza Conflict', (25 September 2009) UN Doc A/HRC/12/48 para. 278; 'Al-Haq's Rejoinder to Gisha's 'Scale of Control' Report: Israel's Continued Responsibility as the Occupying Power in the Gaza Strip' (Gisha, 18 December 2011), available at <Al-Haq's Rejoinder to Gisha's 'Scale of Control' Report: Israel's Continued Responsibility as the Occupying Power in the Gaza Strip - Gisha>

called Operation “Protective Edge”).¹³

The 2021 military offensive (so-called Operation “Guardian of the Walls”) was a continuation of this long-standing policy of indiscriminate violence and destruction by the IOF against the people of Gaza and the Palestinian people as a whole. These offensives have resulted in significant damage to non-military targets, with the IOF indiscriminately targeting civilian property, including residential and commercial buildings.¹⁴ In the May 2021 offensive alone, Al-Haq recorded those Israeli attacks have damaged or destroyed 7,680 housing units, 483 commercial facilities and 59 manufacturing establishments.¹⁵ While this report will concentrate only on the Khudair warehouse attack, it must be appreciated that the attack is part of a broader pattern of IOF attacks against civilian objects across the Gaza Strip, as a form of collective punishment and reprisal against the civilian Palestinian population.

Aside from military offensives against Gaza, Israel has also enacted other policies designed to cripple the Palestinian people. Since the formation and democratic election of the *de facto* Hamas government in 2007 within the Gaza Strip, Israel has implemented a long-standing closure and air, sea and land military blockade, which has been in effect ever since.¹⁶ This closure and military blockade has limited the flow of both goods and people, negatively impacting both daily life and rendering economic development impossible for the Palestinian people in Gaza, particularly following the successive offensives made by Israel against the territory.¹⁷

13 See Al-Haq, ‘Operation Cast Lead’: A Statistical Analysis (August 2009), available at <Microsoft Word - Gaza-operation-cast-Lead-statistical-analysis _2_.doc (alhaq.org)> ; Al-Haq, Operation Cast Lead and the Distortion of International Law: A Legal Analysis of Israel’s Claim to Self-Defence under Article 51 of the UN Charter (April 2009), available at <Operation Cast Lead and the Distortion of International Law (alhaq.org)>; See Al-Haq, Divide and Conquer: A Legal Analysis of Israel’s 2014 Military Offensive Against the Gaza Strip (2015), available at: <DIVIDE.AND.CONQUER.pdf (alhaq.org)>

14 Ibid

15 Al Mezan Center for Human Rights, Al-Haq, and PCHR, ‘Assault on Gaza in Numbers’ (2022) available at: <gaza-report-english-1-page-view-light-1644233950.pdf (alhaq.org)>

16 Israel Ministry of Foreign Affairs, ‘Security Cabinet declares Gaza Hostile territory’ (19 September 2007) available at: <Security Cabinet declares Gaza hostile territory | Ministry of Foreign Affairs (www.gov.il)> ; Al-Haq, ‘Israel declares Gaza “enemy entity”’ (The Electronic Intifada, 23 September 2007). Available at: <Israel declares Gaza “enemy entity” | The Electronic Intifada>

17 Gisha, ‘Gaza in Numbers’ (May 2019). Available at: <Gaza_in_no.en.pdf (gisha.org)>

The targeting of commercial structures during successive IOF military offensives on the Gaza Strip has negatively impacted Gaza's economy significantly.¹⁸ This has in turn been exacerbated through the military blockade of Gaza, crippling reconstruction efforts through the prevention of key construction materials, such as cement, from entering the territory.¹⁹ One primary effect is the increase in the already high levels of unemployment, with a rate of 49 percent unemployment within Gaza, which increases to 67 percent among youth and graduates.²⁰ Access to food and medical supplies has been significantly reduced and the Israeli blockade amounts to 'collective punishment', a position recognised by the International Committee for the Red Cross (ICRC) and the UN Special Rapporteur for the Occupied Palestinian Territory, Michael Lynk.²¹

18 World Bank, "Economic Monitoring Report to the Ad Hoc Liaison Committee- November 2021", para. 15, p. 7, available at: <<https://www.worldbank.org/en/country/westbankandgaza/publication/economic-monitoring-report-to-the-ad-hoc-liaison-committee-november-2021>>.

19 Human Rights Watch, 'Gaza: Israel's May Airstrikes on High-Rises' (23 August 2021) available at: <[Gaza: Israel's May Airstrikes on High-Rises | Human Rights Watch \(hrw.org\)](#)>

20 Euro-Med Human Rights Monitor, 'Israel's Targeting of economic facilities in Gaza signals disastrous consequences' (19 May 2021) available at: <[Israel's targeting of economic facilities in Gaza signals disastrous consequences \(euromedmonitor.org\)](#)>

21 ICRC, 'Gaza Closure: Not Another Year!', (ICRC, 14 June 2010) available at: <[Gaza closure: not another year! - ICRC](#)>; Rule 103, ICRC Customary IHL Database, available at: <[Customary IHL - Rule 103. Collective Punishments \(icrc.org\)](#)>; UN HRC, 'Israel's collective punishment of Palestinians illegal and an affront to justice: UN expert' (18 July 2020), available at: <<https://reliefweb.int/report/occupied-palestinian-territory/israel-s-collective-punishment-palestinians-illegal-and>>



The Khudair Warehouse burning after the IOF attack, © Ahmad Hasaballah, Fire Service Department - Gaza, May 2021

2 Israel's Attack on the Khudair Agrochemical Warehouse

On the 15 May 2021, on the fifth day of the May 2021 offensive against Gaza, the IOF attacked the Khudair Agrochemical Warehouse,²² located in the northern Gaza Strip, in the Beit Lahiya area.²³ There was considerable residential housing near the warehouse, including the homes of the factory owners, the Khudair family.²⁴ The Khudair warehouse was the largest warehouse for agricultural supplies within Gaza, housing over 50 percent of agricultural supplies within the Gaza Strip and making the warehouse particularly vital for farming within the Gaza Strip.²⁵ The warehouse contained a variety of chemical products and other agricultural equipment, such as plastic, nylon, pesticides and fertilizers.²⁶

According to Al-Haq's Forensic Architecture Investigation Unit, the

22 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq.

23 Ibid; Affidavits on file with Al-Haq.

24 Ibid.

25 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq; Affidavits on file with Al-Haq.

26 Ibid.

warehouse stored 53.35 tons of hazardous chemicals and 37.6 tons of plastics.²⁷ Many of the chemicals stored in the warehouse were dangerous substances that required special treatment and awareness in both their storage or use. In particular, 18,000 litres of Kontos, a highly toxic and flammable insecticide, was stored within the Khudair warehouse.²⁸ Kontos, “in the event of a fire”, can release hydrogen cyanide, a gas that can be fatal if a person is exposed to large quantities.²⁹ Aside from Kontos, there were also a variety of other chemicals stored at the warehouse, most of which could produce a toxic reaction when exposed to fire or extreme heat. These included: 1500kg of Ken-amine, a herbicide; 288kg of Goal Herbicide (oxyfluorfen); 200kg of Metamor (metam Sodium) a soil purifier, around 200kg; and 2,044 kg of chlorpyrifos in a variety of brands.³⁰ According to recorded testimony, all the agricultural products were imported via Israel, with no goods entering via Egypt, meaning that Israel was aware of the nature of the Khudair warehouse and its contents.³¹

Al-Haq’s Forensic Architecture Investigation Unit concluded that the attack began around 5.46 pm, with six artillery shells landing on the warehouse over the course of several minutes.³² The IOF did not attack with explosive shells, instead the rounds started emitting heavy smoke, with the ammunition burning at an intense heat. The unit identified the munition used as the M150 Smoke HC 155mm ammunition developed by the Israeli weapons manufacturer, Elbit Systems. An “advanced smoke projectile”, the M150 is a new type of shell that splinters into 5 canisters, all of which emit high-density smoke. Munitions expert Chris Cobb-Smith explained that there could be “no military justification” to fire “inherently inaccurate” and highly flammable munitions into a densely inhabited area. We therefore conclude this was likely done with the intent to set fire to the warehouse.

27 These are estimates from Al-Haq’s Forensic Architecture Investigation Unit investigation, which are recorded and on file with Al-Haq.

28 Ibid.

29 Al-Haq’s Forensic Architecture Investigative Unit Script on file with Al-Haq.

30 All chemical quantities in this report are estimates from Al-Haq’s Forensic Architecture Investigation Unit, which are recorded and on file with Al-Haq.

31 Al-Haq’s Forensic Architecture Investigative Unit Script on file with Al-Haq; Affidavits on file with Al-Haq.

32 Ibid.

By 5.56 pm the plastic stored within the warehouse caught fire, starting the major chemical fire that, according to field documentation, would release fumes for 22 days.³³ These fumes were so unpleasant that residents near the warehouse were forced to leave their homes, due to the smell.³⁴ An eyewitness described the attack to Al-Haq:

I remember coming home, after the afternoon on Saturday, 15 May 2021, at about 6 p.m. I heard shells falling near my house, and I looked out the window, staying in the last floor of the building, and I saw smoke bombs in large numbers, which were falling successively over the warehouses of Khudair fertilizer and pesticide companies, and thick white smoke was coming out of those shells, and smoke was spreading heavily in the area. Within minutes after the fall of those shells, I saw flames rising from the stores of Khudair companies.³⁵

Following the attack, a chemical plume formed from the fire at the warehouse which soon spread over northern Gaza, moving southwest from the location of the warehouse, covering an area of around 5.7 kilometres. Al-Haq's Forensic Architecture Investigation Unit has testimony from fluid dynamics expert, Dr. Salvador Navarro-Martinez, that the concentration of chemicals in the plume crossed the "Acute Emergency Levels" – meaning that areas away from the warehouse suffered from a chemical concentration that caused "irreversible damage" to human health.³⁶ From the analysis of the Forensic Architecture Investigation Unit there is clear evidence that the chemical plume is linked with a number of skin irritancies and illnesses such as blisters among civilians that were exposed to the chemical plume, as well as two miscarriages that were linked by the hospital to the chemical exposure.³⁷

33 Ibid.

34 OCHA, 'Environmental and health risk still unfolding: the bombing of Gaza's Largest Agrochemical Warehouse' (3 November 2021) available at: <Environmental and health risk still unfolding: the bombing of Gaza's largest agrochemical warehouse | United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory (ochaopt.org)>

35 Al-Haq, Affidavit Hassan Khaled Jason Gbain, (5 October 2021). Affidavit on file with Al-Haq.

36 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq.

37 Ibid; Affidavits on file with Al-Haq.

Doaa Zuhair Idris Khudhair, 40 recounted to Al-Haq:

During the same period, my son Zuhair, 18, began to show symptoms of strong itching in the skin, and he got a rash throughout most of his body. He was constantly scratching his body, and showed signs of blue and red patches. We went to Kamal Adwan Hospital, and bought ointment and treatments for skin problems, due to the exposure to toxic gases as a result of the bombing of the stores of Khudair companies. A large number of residents of the area, family members and neighbors, complained of the same health problems.³⁸

In an affidavit to Al-Haq, Hassan Khaled Jason Gbain, 30 recalled:

After I came back to my house [after the aggression], I could not bear the bad smells, which were emitted from the stores of the Khudair companies, because they are close to my house, and the smells were increasing over time. Two days after I returned home, and as a result of inhalation of toxic gases and foul smells, which I smelled all the time, I felt a lot of pain in my abdomen, and shortness of breath. I was pregnant, in the second month, so I went to Kamal Adwan Military Hospital in Beit Lahia to see the doctor. When she did a pregnancy check, she told me [the doctor], that my baby was dead, and I had been poisoned as a result of bad smells and toxic gases.³⁹

Aside from the harm to the population of Gaza, there was also significant environmental damage caused by the attack, with chemical waste from the fire leaking into the ground and residue being spread by the chemical plume above over nearby farmland.⁴⁰ Al-Haq's Forensic Architecture Investigation Unit shared its findings with the Conflict and Environment Observatory, who stated that the "nature of the chemicals released by this strike into the atmosphere, suggest a risk of significant environmental harm" and that "chemicals will have discharged to underlying soils and potentially contaminated groundwater".⁴¹ The UN Development Programme has been removing the hazardous waste caused by the warehouse attack in the area, to ensure that the soil and groundwater do not become contaminated,

38 Al-Haq affidavit, Doaa Zuhair Idris Khudhair (5 October 2022). Affidavit on file with Al-Haq.

39 Al-Haq affidavit, Hassan Khaled Jason Gbain (5 October 2021). Affidavit on file with Al-Haq

40 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq.

41 Ibid.

however this action has been hampered by the limited workforce and available expertise in cleaning chemical spillage in Gaza.⁴²

The fire destroyed the Khudair warehouse as well as all the agricultural supplies stored at the warehouse, which had been bought on credit by the family run company operating the warehouse, leaving the family in debt.⁴³

The damage is believed to have cost over \$13 million US dollars in total.⁴⁴

42 OCHA, 'Environmental and health risk still unfolding: the bombing of Gaza's Largest Agrochemical Warehouse' (3 November 2021) available at: <Environmental and health risk still unfolding: the bombing of Gaza's largest agrochemical warehouse | United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory (ochaopt.org)>

43 Ibid.

44 Ibid.



Gazan firefighters attempt to control the flames at the Khudair Warehouse following the Israeli Attack. © Ahmad Hasaballah, Fire Service Department – Gaza, May 2021

3 Legal Analysis

Israel's military offensive on the Gaza Strip in May 2021 took place during an international armed conflict, specifically a situation of occupation, regulated under international humanitarian law.⁴⁵ The belligerent occupation of the Palestinian territory is recognised by the vast majority of the international community and its institutions, including the International Courts of Justice, International Criminal Court and the United Nations.⁴⁶ Given the situation of occupation, a number of key provisions of international humanitarian law apply.

Israel is a party to the Hague Regulations (1907) and the Fourth Geneva Convention (1949), which governs the administration of the occupied

45 For previous analysis of the conflict classification in Gaza see, A/HRC/29/52, Report of the independent commission of inquiry established pursuant to Human Rights Council resolution S-21/1 (24 June 2015) para 71.

46 Advisory Opinion Concerning Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, International Court of Justice (ICJ), 9 July 2004; Situation in the State of Palestine, ICC-01/18, pre-trial chamber, ICC, 5 February 2021; United Nations, General Assembly, Status of the Occupied Palestinian Territory, including East Jerusalem, 6 May 2004, A/RES/58/292, para. 1.

territory, clarifying the obligations and limits placed upon the Occupying Power.⁴⁷ As such, these provisions continue to apply to Israel's administration of the OPT, in addition to the laws of armed conflict governing the conduct of hostilities, which apply to Israel as customary international law.⁴⁸

3.1 Khudair Warehouse was not a Legitimate Military Objective

International humanitarian law requires that only legitimate military objectives can be the target of an attack by parties to a conflict. A military objective is "limited to those 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".⁴⁹ In particular, parties to the conflict are obliged to distinguish both between civilians and combatants, and between civilian objects and military objectives.⁵⁰ Accordingly, civilian objects, as well as civilians, cannot be targeted.⁵¹ Under Article 52(1) of Additional Protocol 1 (1977), a civilian object is negatively defined, as all objects which are not defined as military objectives.⁵²

Al-Haq's Forensic Architecture Investigation Unit's investigation, alongside Al-Haq's field reports and other documentation clearly establishes that the

47 International Conferences (The Hague), Hague Convention (IV) Respecting the Laws and Customs of War on Land and Its Annex: Regulations Concerning the Laws and Customs of War on Land (Hague Regulations), 18 October 1907; International Committee of the Red Cross (ICRC), Geneva Convention Relative to the Protection of Civilian Persons in Time of War (Fourth Geneva Convention), 12 August 1949, 75 UNTS 287.

48 Although Israel is not a party to either of the Additional Protocols to the Geneva Conventions, the provisions governing conduct of hostilities apply to Israel as intransgressible rules of customary international law; ICJ in the Nuclear Weapons case, Advisory Opinion, 8 July 1996, ICJ Reports 1996, 434.

49 Article 52(2), Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Additional Protocol I), 8 June 1977, 1125 UNTS 3.

50 Article 48, Additional Protocol I.

51 Article 52(1), Additional Protocol I.

52 Ibid.

Khudair warehouse was not a legitimate military objective. The warehouse stored industrial fertilizers, pesticides and plastics and served no military function. There is no evidence that any fighters or other legitimate military targets were in the area. The site was clearly a civilian object under international humanitarian law and could not be legitimately targeted. Notably, attacks against civilian objects across Gaza carried out as reprisals or collective punishment, is further prohibited under international law.⁵³

3.2 Israel's Failure to Take Precautions Prior to the Attack

Under international law, Israel has an obligation to take all feasible precautions in their attacks to limit damage and harm to civilians and civilian objects, including by giving warnings to nearby civilians that an attack will be taking place near their location. The principle is codified in Article 2(3) of the 1907 Hague Convention (IX), of which Israel is a party to, and which is also declarative of customary international law, and Article 57(1) of Additional Protocol I (1977). Further, the ICRC Rule 15 on Customary International law, provides that:

In the conduct of military operations, constant care must be taken to spare the civilian population, civilians and civilian objects. All feasible precautions must be taken to avoid, and in any event to minimize, incidental loss of civilian life, injury to civilians and damage to civilian objects.

In this respect, the IOF should make every feasible effort to verify that the object in question is a military objective at the time the attack is made, taking every opportunity to minimise incidental civilian damage and loss from the attack.⁵⁴ Failing to do so would amount to committing an indiscriminate attack under international law.⁵⁵ There are exceptions to the requirement of precaution in attacks, in that combatants are only

53 Rule 146, ICRC Customary IHL Database, available at: <Customary IHL - Rule 146. Reprisals against Protected Persons (icrc.org)> ; Article 33, Fourth Geneva Convention; Rule 103, ICRC Customary IHL Database available at <Customary IHL - Rule 103. Collective Punishments (icrc.org)> ; Article 50, Hague Regulations; Article 87, Third Geneva Convention.

54 Article 57; Article 51(5)(b), Additional Protocol I.

55 Article 51(5)(b), Additional Protocol I.

expected to do what is practicable or practically possible at the time of the attack. However, given the nature of the artillery strike on the Khudair warehouse, there was considerable opportunity to take precautions.⁵⁶

In addition, even if the object is a legitimate military objective, the attacker should consider if the military advantage is proportionate to the potential civilian loss and/or damage.⁵⁷ Should the proportional damage to civilians be considered too great, the attack should not be made, as doing so would also be considered an indiscriminate attack.⁵⁸

According to the investigation by Al-Haq's Forensic Architecture Investigation Unit, and from Al-Haq's field research, there was no prior warning given before the attack on the Khudair Warehouse.⁵⁹ Similarly a report by the United Nations Office for the Coordination of Humanitarian Affairs, states verifies that Israel gave no prior warning before the attack.⁶⁰ This was despite the fact that residents in the area were living only meters away from the warehouse that the IOF were going to attack.⁶¹ As such the IOF failed to take a very basic precaution that could of easily been given and that had been given during previous attacks made across Gaza.

In addition to failing to give warnings to the civilian population or attempt an evacuation, the IOF also should have taken greater precautions due to the nature of their target. As the IOF's target was an industrial storage warehouse, the IOF should have been aware of the greater risk of creating dangerous fires. Additionally, given that all the chemicals and industrial goods stored at the Khudair warehouse entered Gaza through the Israeli controlled checkpoints, Israel had a knowledge that the warehouse contained dangerous chemicals that, when attacked, could cause a major chemical fire. Given the nature of the property, its location and the fact that

56 Commentaries to Article 57 of Additional Protocol I.

57 Article 51(5)(b), Additional Protocol I.

58 Ibid.

59 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq.

60 OCHA, 'Environmental and health risk still unfolding: the bombing of Gaza's Largest Agrochemical Warehouse' (3 November 2021) available at: <Environmental and health risk still unfolding: the bombing of Gaza's largest agrochemical warehouse | United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory (ochaopt.org)>

61 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq.

Israel should have known, or at the very least been aware of the high chance, that dangerous chemicals were stored in the warehouse, Israel should have taken these facts into account when considering an attack on the Khudair warehouse. There is distinct evidence that suggests that Israel either failed to take the most basic precautions in its attack on the Khudair Warehouse or did so and attacked regardless, amounting to an indiscriminate attack under international humanitarian law.

All evidence indicates that the IOF failed to take the most basic precautions in its attack on the Khudair warehouse. The IOF first violated international law when it failed to identify that their target was not a military objective. It also violated international law when it failed to either recognise the potential harm that could be caused by targeting a warehouse storing industrial chemicals, or chose to attack it anyway, regardless of the chemical reaction that spread over the area.

3.3 An Attack on Objects Indispensable to the Survival of Civilian Population

Al-Haq further contends that the attack on the Khudair Agrochemicals Warehouse amounts to a prohibited attack, designed to “destroy, remove or render useless objects indispensable to the survival of the civilian population”. Article 54(2) of Additional Protocol I, outlines the general rule that:

It is prohibited to attack, destroy, remove or render useless objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies and irrigation works, for the specific purpose of denying them for their sustenance value to the civilian population or to the adverse Party, whatever the motive, whether in order to starve out civilians, to cause them to move away, or for any other motive.

Importantly, the ICRC Commentary to Additional Protocol I, explains that “the verbs ‘attack’, ‘destroy’, ‘remove’ and ‘render useless’ are used in order to cover all possibilities, including pollution, by chemical or other

agents, of water reservoirs, or destruction of crops by defoliants”.⁶² Moreover, the protection of agricultural areas and foodstuffs is to be “interpreted in the widest sense”.⁶³ This interpretation undoubtedly includes the attack on the warehouse which provided, “pesticides, fertilisers and materials such as plastic, nylon and water pipes, accounting for over 50 per cent of all agricultural supplies across the Gaza Strip”.⁶⁴ Following the May 2021 offensive, some 1.4 million Gazans were food insecure.⁶⁵ Given the Gaza Strip’s food shortages, the destruction of vital agricultural equipment likely exacerbated the long-term food shortages in Gaza.

It should be noted that acts targeting objects indispensable for the survival of the civilian population may be prosecuted as a war crime under Article 8(2)(b)(xxv) of the Rome Statute of the International Criminal Court (ICC).⁶⁶

62 ICRC, “Commentary of 1987 Protection of Objects Indispensable to The Survival of the Civilian Population”, available at: <Treaties, States parties, and Commentaries - Additional Protocol (I) to the Geneva Conventions, 1977 - 54 - Protection of objects indispensable to the survival of the civilian population - Commentary of 1987 (icrc.org)>

63 Ibid

64 OCHA, ‘Environmental and health risk still unfolding: the bombing of Gaza’s Largest Agrochemical Warehouse’ (3 November 2021) available at: <Environmental and health risk still unfolding: the bombing of Gaza’s largest agrochemical warehouse | United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory (ochaopt.org)>

65 World Bank, UN, EU, ‘Gaza Rapid Damage and Needs Assessment: June 2021’ (July 2021) available at: <World Bank, UN, EU Document (unmissions.org)>

66 Article 8(2)(b)(xxv), Rome Statute of the International Criminal Court. “Intentionally using starvation of civilians as a method of warfare by depriving them of objects indispensable to their survival, including wilfully impeding relief supplies as provided for under the Geneva Conventions”.

3.4 Long Term Environmental Damage to the Gaza Strip

Under Article 35(3) of the 1977 Additional Protocol I, “It is prohibited to employ methods or means of warfare which are intended, or may be expected, to cause widespread, long-term and severe damage to the natural environment.” This requirement for environmental protection is reiterated in Article 55(1) of the same protocol. The prohibition of causing widespread, long term and severe environmental damage has been reiterated in many state military manuals, as well as supported in state submissions to the Nuclear Weapons Case at the International Court of Justice, indicating that the prohibition is part of customary international law.⁶⁷ Israel has also stated that its armed forces do not utilize, condone or use methods or means of warfare which are intended or may be expected, to cause widespread, long-term and severe damage to the environment.⁶⁸ Significantly, the Rome Statute of the International Criminal Court includes as a war crime, “Intentionally launching an attack in the knowledge that such attack will cause... long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated”.⁶⁹

Al-Haq’s Forensic Architecture Investigation Unit contacted the Conflict and Environment Observatory with regard to the Khudair Warehouse attack, to consider what impact the attack may have had on the environment of the Gaza Strip. The Conflict and Environment Observatory stated that “the nature of the chemicals released by this strike into the atmosphere, suggest a risk of significant environmental harm” and that “chemicals will have discharged to underlying soils and potentially contaminated groundwater”.⁷⁰ Following the attack, the UN Development Programme (UNDP) has been removing the hazardous waste from the area, to ensure that the soil and groundwater do not become contaminated, however this action has been hampered by the limited workforce and available expertise in cleaning

67 Rule 45. ICRC customary IHL database, available at: <Customary IHL - Rule 45. Causing Serious Damage to the Natural Environment (icrc.org)>

68 Ibid.

69 Rome statute, Article 8(2)(b)(iv).

70 Al-Haq’s Forensic Architecture Investigative Unit Script on file with Al-Haq.

chemical spillage in Gaza.⁷¹

Both the statement and the action of the UNDP in attempting to clear contaminated soil indicates that the attack and destruction of the Khudair warehouse by the IOF has likely left major environmental damage to the surrounding area and the areas of the Gaza Strip affected by the chemical plume.

3.5 Did the Attack on the Khudair Agrochemical Warehouse on the 15 May 2021 Create a Chemical Weapon?

The use of chemical weapons is prohibited during situations of international or non-international armed conflict.⁷² The Nuclear Weapons Case from the International Court of Justice reiterates specifically that the use of certain weapons, including chemical weapons and asphyxiating gases, have been prohibited from use in armed conflict under international humanitarian law.⁷³ The case also reiterates basic principles of international law relevant to this particular attack, namely: “States must never make civilians the object of attack and must consequently never use weapons that are incapable of distinguishing between civilian and military targets”.⁷⁴

The chemicals stored in the Khudair Agricultural Warehouse were industrial and agricultural chemicals, as outlined in the Forensic Architecture Investigation Unit’s report.⁷⁵ Therefore, at first it would appear unclear as to how such chemicals can form a chemical weapon. However, from Al-Haq’s analysis, the IOF’s targeting with knowledge of toxic chemicals stored in the warehouse effectively amounted to an indirect use of chemical

71 OCHA, ‘Environmental and health risk still unfolding: the bombing of Gaza’s Largest Agrochemical Warehouse’ (3 November 2021) available at: <Environmental and health risk still unfolding: the bombing of Gaza’s largest agrochemical warehouse | United Nations Office for the Coordination of Humanitarian Affairs - occupied Palestinian territory (ochaopt.org)>

72 Rule 74. ICRC customary international law database, available at: <Customary IHL - Rule 74. Chemical Weapons (icrc.org)>

73 Legality of the Threat or Use of Nuclear Weapons, Advisory Opinion, I.C.J. Reports 1996, p. 226, International Court of Justice (ICJ), 8 July 1996.

74 Ibid, 78.

75 Al-Haq’s Forensic Architecture Investigative Unit Script on file with Al-Haq.

weapons against the people of Gaza, prohibited by the Chemical Weapons Convention (1992), the Geneva Protocol to the Hague Convention (1925), as well as general principles of international law.⁷⁶ Although Israel is not party to the Chemical Weapons Convention, or the 1925 Geneva Protocol to the Hague Convention, the use of chemical weapons in armed conflict is prohibited as customary international law.⁷⁷ In this vein, Israel has also pledged to never use chemical weapons and has stated that it is committed to their elimination.⁷⁸

The Chemical Weapons Convention defines chemical weapons in several ways, most relevant to this submission as “toxic chemicals and their precursors except where intended for purposes not prohibited under this Convention, as long as the types and quantities are consistent with such purposes”.⁷⁹ In this vein, the Organisation for the Prohibition of Chemical Weapons (OPCW) highlights that:

A common conception of a chemical weapon (CW) is of a toxic chemical contained in a delivery system such as a bomb or artillery shell. While technically correct, a definition based on this conception would only cover a small portion of the range of things the Chemical Weapons Convention (CWC) prohibits as ‘chemical weapons’. Under the CWC, the definition of a chemical weapon includes all toxic chemicals and their precursors, except when used for purposes permitted by the Convention – in quantities consistent with such a purpose.⁸⁰

In this sense the Chemical Weapons Convention does not provide a strict list of chemical weapons, but instead provides a list of purposes that are not prohibited for toxic chemical usage, such as agricultural and industrial

76 Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction, 3 September 1992 (Chemical Weapons Convention); Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, 17 June 1925 (1925 Geneva Protocol).

77 Rule 74. ICRC customary international law database, available at: <Customary IHL - Rule 74. Chemical Weapons (icrc.org)>

78 Ibid.

79 Article 2(1)(a), Chemical Weapons Convention.

80 OPCW, “What is a Chemical Weapon?”, available at: <What is a Chemical Weapon? | OPCW>

use.⁸¹ The convention provides that a toxic chemical is any chemical which “through its chemical action on life processes can cause death, temporary incapacitation or permanent harm [...] This includes all such chemicals, regardless of their origin or of their method of production, and regardless of whether they are produced in facilities, in munitions or elsewhere”.⁸² Precursors are defined in the convention as “any chemical reactant which take part at any stage in production by whatever method of a toxic chemical”.⁸³

The Khudair Warehouse stored a variety of chemicals that can be considered precursors to toxic chemicals under schedule 3 of the Chemical Weapon Convention, and therefore could form a chemical weapon.⁸⁴ For example, one room contained over 18,000 litres of Kontos, a highly toxic liquid insecticide. Kontos can release hydrogen cyanide, a toxic chemical listed in schedule 3 of the Chemical Weapons Convention when exposed to extreme heat or burned. Most of the chemicals stored in the warehouse, when burnt, could form hydrogen cyanide, as well as other hazardous chemical materials. Al-Haq’s Forensic Architecture Investigation Unit concluded around 421kg of hydrogen cyanide was released from the chemical fire at the warehouse.⁸⁵ Additionally, Al-Haq’s Forensic Architecture Investigation Unit has concluded that around 30.8 tons of Sulfur Dioxide and 49.45 tons of Phosphorous Pentoxide were released during the fire.⁸⁶

While these chemicals are not listed in the schedules of the Chemical Weapons Convention, they are both dangerous chemicals, with Sulfur Dioxide being considered highly toxic and corrosive, requiring PPE for use and Phosphorous Pentoxide being able to cause “irreversible damage to skin” when exposed to flesh.⁸⁷ A variety of other dangerous chemicals

81 Article 2(9)(a), Chemical Weapons Convention.

82 Article 2(2), Chemical Weapons Convention.

83 Article 2(3), Chemical Weapons Convention.

84 Schedule 3, Chemical Weapons Convention.

85 Al-Haq’s Forensic Architecture Investigative Unit chemical statistics on file with Al-Haq.

86 Ibid.

87 Linde, Sulfur Dioxide Safety Data Sheet, available at: <sulfur-dioxide-so2-safety-data-sheet-sds-p4655.pdf (lindeus.com)>; Carl Roth, Phosphorous Pentoxide safety data sheet, available at <Safety Data Sheet: Phosphorus pentoxide (carlroth.com)>

were also released and a full estimated list of chemicals released from the fire at the Khudair warehouse has been compiled by Al-Haq's Forensic Architecture Investigation Unit (see Annexes). It should also be noted that when Al-Haq's Forensic architecture investigation unit contacted an expert in chemical weapons about the Khudair warehouse attack, the expert stated that "When exposed to several chemical substances at the same time, as with the fire at this Warehouse, toxic emissions have the potential to amplify each other's impacts", making the chemical plume from the fire, with its variety of chemicals mixed in, particularly dangerous.⁸⁸ While all the chemicals stored at the warehouse had an intended agricultural and industrial purpose, the attack by the IOF effectively reappropriated the chemicals as a chemical weapon against Gaza's civilian population.

Al-Haq and Al-Mezan records and documentation show that a number of people have experienced skin blisters and other irritations following exposure to the chemical plume, and at least two women are known to have suffered miscarriages due to their exposure.⁸⁹ In total, Al-Haq's Forensic Architecture Investigation Unit estimates at least 3,000 homes were affected, with the chemical plume traveling over the Jabalia camp in Gaza as it spread from the warehouse.⁹⁰

Given that all the chemicals stored in the Khudair warehouse passed through Israeli checkpoints to enter the Gaza Strip, the IOF had sufficient information to know, or be aware of the possibility, that highly dangerous chemicals were stored in the warehouse. Despite this information, the IOF proceeded to attack the warehouse. As noted by Al-Haq's Forensic Architecture Investigation Unit, the IOF used ammunition that ignited and burned at an intense heat to attack the warehouse. The intense heat created by the ammunition would knowingly be able to create a fire with the right material, such as the plastic and nylon stored at the warehouse. Given that the IOF should have been aware of the chemical storage at the location, the IOF should also have known that this attack could create a chemical reaction in the precursor chemicals stored at the warehouse that could then produce a toxic chemical.

88 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq.

89 Internal documentation available from Al-Haq.

90 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq.



Map showing the extent of the chemical plume across Northern Gaza, the outer yellow line indicates the furthest reach of the plume while the darker section within indicates the greatest concentration of the plume- © Al-Haq Forensic Architecture Investigation Unit, 26 May 2022

The IOF has not provided a statement on what their target or military objective was when striking the warehouse. As noted above, nothing in Al-Haq or Al-Mezan documentation suggests that the Khudair warehouse could have been a legitimate military target under international humanitarian law in any way.⁹¹ When contacted by Al-Haq's Forensic Architecture Investigation Unit munitions expert Chris Cobb-Smith stated that there is no apparent military reason to use smoke artillery around the warehouse for their usual military purpose, screening and hiding troops.⁹² Al-Haq's Forensic Architecture Investigation Unit report also indicates that the IOF targeted a number of industrial facilities, in an effective pattern.⁹³

The 1925 Geneva Protocol to the Hague Convention provides that the use of "asphyxiating, poisonous or other gases" as a method of warfare is

91 Article 52(2), Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Additional Protocol I), 8 June 1977, 1125 UNTS 3.

92 Al-Haq's Forensic Architecture Investigative Unit Script on file with Al-Haq.

93 Ibid.

prohibited.⁹⁴ The deliberate attack on the Khudair warehouse, using ammunition that burns intensely, shows an intention to destabilise the chemical compounds stored at the warehouse, effectively unleashing the toxic chemicals on the people of Gaza.

In addition to violating the 1925 Geneva Protocol and the Chemical Weapons Convention, the attack wilfully caused serious injury to body and health of many Gazans, through the release of the toxic chemicals from the fire, violating the grave breaches provision of the Fourth Geneva Convention.⁹⁵ As, such, Israel's bombing of the Khudair agrochemical warehouse, with knowledge of the presence of toxic chemicals stored therein, is tantamount to chemical weapons through indirect means. Such acts are clearly prohibited as intransgressible principles of customary international law, and prosecutable under the Rome Statute of the International Criminal Court, as grave breaches of wilfully causing great suffering or serious injury to body or health.⁹⁶



Smoke rising from the burning warehouse. This would be the start of the chemical plume that would cover 3,000 homes. © Ahmad Hasaballah, Fire Service Department – Gaza, May 2021

94 1925 Geneva Protocol.

95 Article 147, Geneva Convention Relative to the Protection of Civilian Persons in Time of War (Fourth Geneva Convention), 12 August 1949, 75 UNTS 287.

96 Rome Statute, Article 8(2)(a)(iii).



The perpetrators of the attack and destruction of the Khudair Agrochemical Warehouse may be prosecuted under the Rome Statute of the International Criminal Court for a number of violations, namely: Article 8(2)(a)(ii) and Article 8(2)(a)(iii) (inflicting inhumane treatment and wilfully causing great suffering); Article 8(2)(a)(iv) (extensive destruction and appropriation of property, not justified by military necessity and carried out unlawfully and wantonly) and Article 8(2)(b)(ii) (intentionally directing attacks against civilian objects, that is, objects which are not military objectives); and Article 8(2)(b)(iv) (causing excessive death or injury or damage to the natural environment).

4.1 Inflicting Inhuman Treatment and Wilfully Causing Great Suffering under the Rome Statute

Article 8(2)(a)(iii) prohibits the act of “[w]ilfully causing great suffering, or serious injury to body or health,”⁹⁷ while inflicting “inhumane treatment”⁹⁸ upon protected persons is a war crime under Article 8(2)(a)(ii). Both articles are very similar in their requirements. The jurisprudence of the International Criminal Tribunal for the former Yugoslavia (ICTY) has provided that “causing great suffering” can include moral suffering, and the suffering can be mental or physical suffering.⁹⁹ Further “serious suffering” does not mean that the suffering needs to be permanent and irremediable. Although the suffering will usually cause “long lasting and significant effects”.¹⁰⁰ Such suffering for example may include the suffering of individuals, including the miscarriages of the two pregnant women, residing in close proximity to the Khudair warehouse, which is a long lasting permanent loss, which may additionally cause serious mental suffering.

4.2 Attacks on Property under the Rome Statute

Article 8(2)(b)(ii) of the Rome Statute states as a war crime “[i]ntentionally directing attacks against civilian objects, that is, objects which are not military objectives”. The Article has largely been based on the Article 52 of Additional Protocol I.¹⁰¹ The Elements of Crimes provide three elements relevant for this section, namely: the perpetrator directed an attack; the object of the attack was civilian objects; and the perpetrator intended such civilian objects to be the object of the attack.¹⁰² Critically this report establishes that Israel targeted the Khudair warehouse with knowledge that the warehouse was a civilian object containing agricultural materials

97 Rome Statute, Article 8(2)(a)(iii).

98 Rome Statute, Article 8(2)(a)(ii).

99 Knut Dormann, Robert Kolb, *Elements of War Crimes under the Rome Statute of the International Criminal Court: Sources and Commentary* (CUP 2003) 78.

100 ICTY, *The Prosecutor’s Closing Brief, The Prosecutor v. Zlatko Aleksovski*, para. 45, p. 19.

101 K Drmann, “2. Paragraph 2(b)(ii): Intentionally directing attacks against civilian objects” in O Triffterer, K Ambos (eds) *The Rome Statute of the International Criminal Court, A Commentary* (Beck, Hart, Nomos, 2016) 362 para. 208

102 Elements of Crimes, Article 8(2)(b)(ii).

for civilian use, including industrial fertilizers, pesticides and plastics and served no military function (see section 3.1).

4.3 Article 8(2)(b)(iv), including Environmental Destruction, under the Rome Statute

Article 8(2)(b)(iv) of the Rome Statute provides for the war crime of “intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated”.¹⁰³

The Elements of Crimes of the International Criminal Court list three elements in addition to the two elements common to all war crimes committed in an international armed conflict:

- i. the perpetrator launched an attack;
- ii. The attack was such that it would cause incidental death or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment and that such death, injury or damage would be of such an extent as to be clearly excessive in relation to the concrete and direct overall military advantage anticipated;
- iii. The perpetrator knew that the attack would cause incidental death or injury to civilians or damage to civilian objects or widespread, long-term and severe damage to the natural environment and that such death, injury or damage would be of such an extent as to be clearly excessive in relation to the concrete and direct overall military advantage anticipated;
- iv. The conduct took place in the context of and was associated with an international armed conflict;
- v. The perpetrator was aware of factual circumstances that established the existence of an armed conflict.¹⁰⁴

¹⁰³ Rome statute, Article 8(b)(iv).

¹⁰⁴ Elements of Crimes, Article 8(2)(b)(iv)(1)-(3).

In particular, Element (iii) requires that the perpetrator makes a value judgement:¹⁰⁵ the perpetrator must have known that the attack would cause incidental death, injury or damage to the natural environment, of a *clearly excessive* nature in relation to the military advantage sought.¹⁰⁶ The notion of “excessiveness” lies in the balance between the military advantage anticipated and expected incidental death and injury.¹⁰⁷

Article 8(2)(b)(iv) largely reflects the grave breach provision provided in Article 85(3)(b) of Additional Protocol I, with two major changes. Article 85(3)(b) lacks any reference to natural environment damage and there is no additional requirement that the loss, injury or damage must be “clearly” excessive.¹⁰⁸ In many aspects, Article 8(2)(b)(iv) is a clear attempt to reflect the three pillars of IHL: distinction, military necessity and proportionality in attacks.¹⁰⁹

Importantly, Article 8(2)(b)(iv) contains the single reference in the Rome Statute in relation to harm to the natural environment.¹¹⁰ There is no definition of the “natural environment” provided in the Rome Statute, nor is there an internationally recognised definition of what the “natural environment” is.¹¹¹ The ICRC’s 2020 Guidelines on the Protection of the Natural Environment in Armed Conflict considers the natural environment to be “the natural world together with the system of inextricable interrelations between living organisms and their inanimate environment, in the widest sense possible”.¹¹² It is also noted in the guidelines that the natural environment specifically includes products of human intervention,

105 Elements of Crimes, Article 8(2)(b)(iv)(3) fn 37.

106 R Arnold and S Wehrenberg, “Paragraph 2(b)(iv): Intentionally Launching an Attack in the Knowledge of its Consequences to Civilians or to the Natural Environment” in O Triffterer, K Ambos (eds) *The Rome Statute of the International Criminal Court, A Commentary* (Beck, Hart, Nomos, 2016) 377 para. 247.

107 Elements of Crimes, Article 8(2)(b)(iv)(3); Additional Protocol I, Article 51(5)(b) and 57(2)(a)(iii)(b).

108 R Arnold, S Wehrenberg, “4. Paragraph 2(b)(iv): Intentionally Launching an attack in the knowledge of its consequences to civilians or the natural environment” in O Triffterer, K Ambos (eds) *The Rome Statute of the International Criminal Court, A Commentary* (Beck, Hart, Nomos, 2016) 376 para. 245

109 Ibid, para. 246

110 Ibid, para. 253

111 ICRC Guidelines on the Protection of the Natural Environment in Armed Conflict [2002], [ICRC environmental guidelines 2020] 20 para. 16

112 Ibid.

such as food stuffs, agricultural land, drinking water and livestock.¹¹³

As such, this report concludes that there are clear grounds that Israel launched an attack on Khudair warehouse in the knowledge that severe damage would be caused to the natural environment, and this was clearly excessive in relation to the concrete and direct overall military advantage anticipated. It was clear that civilians resided in the immediate vicinity of the warehouse. It was also clear, that a reasonable person would calculate that shelling a building housing toxic chemicals with smoke artillery would lead to a chemical reaction which could contaminate the environment and cause severe damage to health.

4.4 The Ongoing Investigation by the International Criminal Court into the Situation in the State of Palestine

Following the State of Palestine's ascension to the Rome Statute of the International Criminal Court (ICC) in 2015, and the Pre-Trial Chamber's ruling to determine jurisdiction, it is now clear that the ICC has jurisdiction over all international crimes within the Rome Statute committed in the OPT.¹¹⁴ Since 3 March 2021, the Prosecutor of the ICC has opened an investigation into the Situation in the State of Palestine, recognising the ICC's jurisdiction over the entire OPT, i.e., the Gaza Strip, the West Bank including East Jerusalem.¹¹⁵

Accordingly, Al-Haq calls on the Prosecutor of the ICC to investigate all attacks made on civilian property across the Gaza Strip during the May 2021 offensive as potential war crimes, including the attack on the Khudair warehouse.

113 Ibid.

114 Al-Haq, "Q&A, Palestine and the Territorial Jurisdiction at the International Criminal Court" (2020), available at: <https://www.alhaq.org/cached_uploads/download/2020/04/29/qa-interactive-1588137302.pdf> ; <https://www.icc-cpi.int/sites/default/files/CourtRecords/CR2021_01165.PDF>.

115 ICC, 'Statement of the ICC prosecutor, Fatou Bensouda, respecting an investigation of the Situation in Palestine' (3 March 2021), Available at :<Statement of ICC Prosecutor, Fatou Bensouda, respecting an investigation of the Situation in Palestine | International Criminal Court (icc-cpi.int)>

4.5 Universal Jurisdiction

Universal jurisdiction is applicable to all grave breaches of the Geneva Conventions, requiring that national courts around the world jurisdiction prosecute grave breaches of the Geneva Conventions.¹¹⁶ Therefore, there is a duty on the international community to prosecute Israeli actors that have committed grave breaches, should such individuals appear in their jurisdiction, or also hold a nationality in that State.

Al-Haq has concluded that by attacking the Khudair warehouse, the IOF committed several grave breaches, including: wilfully causing great suffering or serious injury to body or health; and extensive destruction of property not justified by military necessity and carried out unlawfully and wantonly.¹¹⁷ Al-Haq calls on the international community to hold Israel and its agents to account for its grave breaches of the Geneva Conventions, as well as for wider human rights violations, crimes against humanity and the act of apartheid perpetrated against the Palestinian people as a whole.

116 Rule 157, ICRC Customary IHL Database, available at: <Customary IHL - Rule 157. Jurisdiction over War Crimes (icrc.org)>; Article 147, Fourth Geneva Convention.

117 Article 147, Fourth Geneva Convention.

5 Criminal Responsibility

The international community has an obligation to hold Israel and Israel's state actors to account for violations of international law. As noted above, states may prosecute under universal jurisdiction or refer cases to the ICC. Under international criminal law, individuals rather than states are held accountable for their crimes. For the attack on the Khudair warehouse, as part of the overall offensive made on Gaza during May 2021, primary individual criminal liability lies with the Israeli Prime Minister at the time of the offensive, Benjamin Netanyahu, as well as Israeli Defense Minister, Benny Gantz. Additionally, the Commander-in-Chief of the Israel Defense Forces, Aviv Kochavi, may also be considered criminally liable for his role in the overall offensive against the Gaza Strip.

Al-Haq calls for a transparent international investigation of all attacks on civilians and civilian property across the Gaza Strip so that perpetrators of war crimes and crimes against humanity are brought to justice. Additionally, third party states should halt supplying Israel with weaponry or munitions used to commit war crimes and human rights abuses amounting to inhumane acts of apartheid against the Palestinian people as a whole.

6 Conclusion and Recommendations

Israel's continuous disregard for basic norms of both international humanitarian law and human rights law is once again reflective of its overall apartheid regime, perpetrated against the Palestinian people as a whole. The attack on the Khudair warehouse, and other industrial targets of a similar nature, indicates a direct attempt to use the chemical contents of civilian objects against the Palestinian population of the Gaza Strip in the form of an indirect chemical weapon. The civilian and environmental suffering caused by the attack could have directly been avoided if the IOF had applied the most basic precautions in its attack against the warehouse, in accordance with their obligations under international humanitarian law. Attacks such as these and the impunity upon which the international community looks upon such attacks serves to reinforce Israel's apartheid regime against the Palestinian people as a whole, as well as Israel's ongoing settler colonial project, despite the project amounting to a blatant violation of the right of the Palestinian people to self-determination.

In light of the above Al-Haq calls on:

- The Prosecutor of the International Criminal Court and the UN Commission of Inquiry to take into particular account Israel's indiscriminate targeting of civilian objects in the Gaza Strip and, in the case of the Khudair warehouse, launching an indirect chemical weapon attack against the Palestinian people, and to fully investigate these violations as war crimes under international criminal law;
- For the Prosecutor of the International Criminal Court and the UN Commission of Inquiry to consider attacks on civilian property as amounting to war crimes, and evaluate their crucial contribution to inhumane acts of apartheid under the Rome Statute and where relevant, the Apartheid Convention and international human rights law;
- To that effect, for the Prosecutor of the International Criminal Court and the UN Commission of Inquiry to include Israel's targeting of commercial property into the ongoing investigations, highlighting

the chemical attack caused and to request a factfinding mission to determine the intention of the IOF in targeting facilities such as the Khudair warehouse, be it malicious intent or reckless disregard;

- For Third States to recognize Israel's unlawful destruction of Palestinian property, primarily in Gaza but also across the OPT, as a fundamental element that enables Israel to further its colonial project in Palestine, and to entrench its apartheid regime over the Palestinian people as a whole;
- For host States to Elbit Systems, including the United Kingdom, to act in compliance with their responsibilities under the UN Guiding Principles on Business and Human Rights and hold Elbit Systems accountable for human rights harms;
- Additionally, for Third States to stop supplying Israel with weaponry and munitions used to commit war crimes, crimes against humanity and enforce apartheid against the Palestinian people as a whole, particularly in the Gaza Strip but also across the OPT;
- For the United Nations to exhort Israel to respect Palestine and the Palestinian People's human rights, including the inherent right to self-determination;
- For international civil society to further support the Palestinian people's struggle against Israel's apartheid regime and colonial settler project.

Annex I

Al-Haq Forensic Architecture Investigation Unit's estimate of contents stored in room one of the Khudair Warehouse

Product Name	Chemical Materials	Total Amount	Unit
"Plastic Tubing " Black Roll Pipes	Polyamide + Polyethylene	5693.288	Kg
(Plastic Sheeting (Rechet	Polyethylene	2833.3	Kg
Nylon Plastic Sheeting	Nylon	12750	Kg
SeaFish_N.P.K Fertilizer	Nitrogen, Phosphate, Calcium	4320	Litre
Plastic Fittings		1000	carton
Materials excluding plastics		4320	litre
Total Plastics		21276.59	Kg
Total Products/Chemicals		5702.4	Kg

Annex II

Al-Haq Forensic Architecture Investigation Unit's estimate of contents stored in room two of the Khudair Warehouse

Product Name	Chemical Materials	Total Amount	Unit
Kontos	spiroetramat (240g/L)	18400	litre
Amoniac. (Ammonium Sulfate)	Sulfur	52000	Kg
SeaFish_N.P.K Fertilizers	Nitrogen, Phosphate, Calcium	12240	litre
Metamor (Metam Sodium) (Liquid)	Metam Sodium510g/L	375	Litre
Monoammonium Phosphate (sober)	Phosphoric acid Monoammonium Salt (85%)	30000	Kg
Fertilizers (Paste) N.P.K.	Nitrogen, Phosphate, Pttasium	15360	Kg
Nemacur 400 EC	Fenamiphos	60	Litre
Canon 50	Potassium and Phosphorus	100	Litre
Amistar	Azoxystrobin250g/L	100	Litre
Plastic Fittings	_	1400	carton
Plastics		2100	Kg
Total Products/Chemicals		67054.76	Kg

Annex III

Al-Haq Forensic Architecture Investigation Unit's estimate of contents stored in room three of the Khudair Warehouse

Product Name	Chemical Materials	Total Amount	Unit
Sila- Fertilizers	Sulfur	22800	Kg
Potassium Nitrate (powder)	Potassium Nitrate	1687.5	Kg
Ken-amine (powder)	dimethylamine and diethanolamine salt	1500	Kg
Neron 250 EC (Liquid)	Xylene, Bromopropylate Tech 92%	60	L
Funguran (Powder)	Copper Hydroxide77%	210	Kg
Deltamethrin Pesticide (Brand name Decis)	deltamethrin11%	140	L
Canon 50	Potassium and Phosphorus 780g/L	60	L
Vydate	Oxamyl24% + Methanol35%	60	L
Stomp Xtra 45.5 CS	Pendimethalin30%	12	L
Basagran herbicide	sodium salt of bentazon87%	36	L
Mesurool Insecticide (Powder)	Methiocarb75%	60	L
Beta- Naphthoxyacetic Acetic Acid (Hanaton)	Naphthoxyacetic Acid	100	L
Titan Insecticide	Clothianidin48%	160	L
Merivon Pesticide (powder)	Pyraclostrobin21.26% + Fluxapyroxad21.26%	84	Kg
Goal Herbicide (Oxyfluorfen) Not mentioned in Khudair's List	Oxyfluorfen 240g/L	1200	L
Dursban Insecticide	Chlorpyrifos12.6%	1920	Kg
Glyfos Herbicide	Glyphosate360g/L	640	L
Metamor (Metam Sodium) (Liquid)	Metam Sodium510g/L	125	L
Nemacur 400 EC (hidden)	Fenamiphos 400g/L	80	L
Roger Tarsis Insecticide (Liquid)	Dimethoate39%, Cyclohexanone30%-50%	168	L
Dorsan DP (Powder) Pesticide	Chlorpyrifos479g/L	1800	Kg

Dursban 4 (Liquid) Pesticide	Chlorpyrifos479g/L	800	L
Dorpas (Liquid) Pesticide	Chlorpyrifos480g/L	80	L
Topstar	Azoxystrobin250g/L	132	L
KF-20	N.P.K. + organic materials	40	L
Hormoril T8	Indol Butyric Acid 0.8% + Acid (I.B.A) + 5% Thiabendazole 2.T.B	80	Kg
Comodor	Chlorothalonil 400g/L Azoxystrobin 80g/L	20	L
Sherpaz	Cypermethrin100g/L	120	L
Bayfidan	Triadimenol250g/L	40	L
Atlas Insecticide	Bifenthrin100g/L	48	L
Murin Vebi Facoum Pasta	Bromadiolone0.01% Brodifacoum+Denatonium	60	Kg
Ratrim	Bromadiolone0.01%	800	L
Typhoon	Glyphosate Isopropylamine Salt 480g/L	120	Kg
Amistar	Azoxystrobin250g/L	100	L
Dicarzol	Formetanate 50%	600	Kg
Dursban 4 (Liquid) Pesticide	Chlorpyrifos479g/L	60	Kg
Mtzon 200 (Hilzan)	Metaldehyde 5%	800	Kg
Safsan 515	Sodium fluorosilicate15%	800	Kg
Earthen plaster (shid)		1440	Kg
Potassium Sulfate 0-0-52	Potassium Sulfate52%	2400	L
Indofil (منسیدان)	Mancozeb36%	1800	Kg
Siperin 20 (5L containers)	Cypermethrin200g/L	1000	L
Siperin 20 (1L containers)	Cypermethrin200g/L	600	L
Humic acid 12/3 Aptec	Soluble Potash5% Humic Acid 80%	1200	L
Siperin (Home Use) 1 Litre		1200	L
Total in Kg		58723.5	
Total in litre		11481	

Annex IV

Al-Haq Forensic Architecture Investigation Unit's estimate of contents stored in room four of the Khudair Warehouse

Product Name	Chemical Materials	Total Amount	Unit
Grass Cutting Machine	Metals + Plastics	375	Kg
Fertilizers (Paste) N.P.K.	Nitrogen, Phosphate, Pttasuim	15360	Kg
Plastic Pipes (Barabeesh Rash). " Black Roll Pipes"	Polyamide	77.57356	Kg
Plastic Sheeting (Rechet)	Polyethylene	6233.26	Kg
Plastic Tubing (Irriations Systems) " Black Roll Pipes"	Polyamide	6072.84	Kg
Vermiculite	Vermiculite	225000	Kg
Total Chemicals		15360	
Total Plastics		12758.67	Kg
Total Soil		225000	Kg

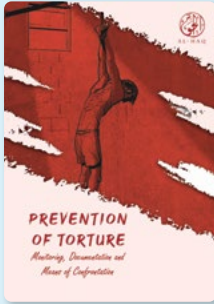
Annex V

Al-Haq Forensic Architecture Investigation Unit's estimate of the chemical output from the Khudair Warehouse Fire

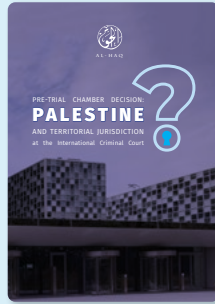
Product	Mass (kg)
Phosphate	23,218
Potassium nitrite	143,612.49
Carbon dioxide	24,959.05
Sulfur dioxide (Threshold of AEGL-2 toxicity has been reached)	30,809
Hydrochloric acid	2,693.62
Copper Oxide	131.839
Hydrogen Cyanide	421.4316
Phosphorus Pentoxide (Threshold of AEGL-2 toxicity has been reached)	49,453.37
Nitrogen (gas)	1,552.87
Nitrogen dioxide	1889.875
Carbon monoxide	303.82
Sulfate	687.957
Amonia	45.805
Hydrogen fluoride	117.15828
Hydrogen bromide	28.8642
Sodium Oxide	134.8881
Zinc Oxide	97.466
Manganese(II) sulfide	104.2
Potassium Oxide	675.986
Carbon disulfide	407.327
Carbon disulfide	319.17
Silicon dioxide	38.339



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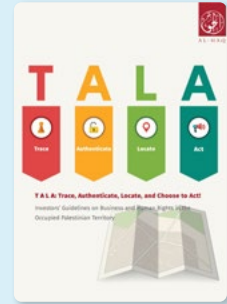
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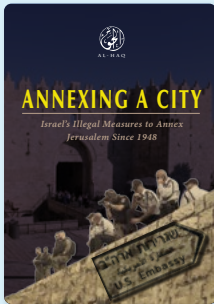
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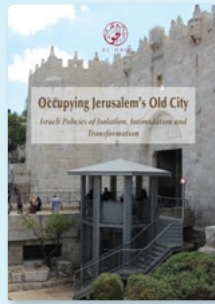
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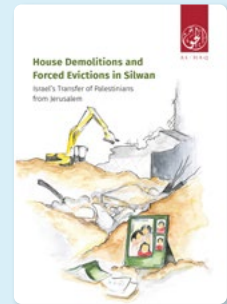
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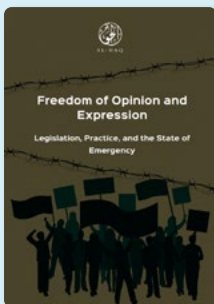
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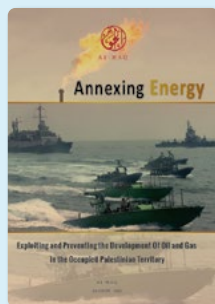
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AL - HAQ

About Al-Haq

Al-Haq is an independent Palestinian non-governmental human rights organisation based in Ramallah in the Occupied Palestinian Territory (OPT). Established in 1979 to protect and promote human rights and the rule of law in the OPT, the organisation has special consultative status with the United Nations Economic and Social Council.

Al-Haq documents violations of the individual and collective rights of Palestinians in the OPT, irrespective of the identity of the perpetrator, and seeks to end such breaches by way of advocacy before national and international mechanisms and by holding the violators accountable. Al-Haq conducts research; prepares reports, studies and interventions on the breaches of international human rights and humanitarian law in the OPT; and undertakes advocacy before local, regional and international bodies. Al-Haq also cooperates with Palestinian civil society organisations and governmental institutions in order to ensure that international human rights standards are reflected in Palestinian law and policies. Al-Haq has a specialised international law library for the use of its staff and the local community.

Al-Haq is the West Bank affiliate of the International Commission of Jurists - Geneva, and is a member of the Euro-Mediterranean Human Rights Network (EMHRN), the World Organisation Against Torture (OMCT), the International Federation for Human Rights (FIDH), Habitat International Coalition (HIC), ESCR-Net – The International Network for Economic, Social and Cultural Rights, the Palestinian Human Rights Organizations Council (PHROC), and the Palestinian NGO Network (PNGO). In 2018, Al-Haq was a co-recipient of the French Republic Human Rights Award, whereas in 2019, Al-Haq was the recipient of the Human Rights and Business Award. In 2020, Al-Haq received the Gwynne Skinner Human Rights Award presented by the International Corporate Accountability Roundtable (ICAR) for its outstanding work in the field of corporate accountability.

