THE IMPACTS OF THE ENFORCEMENT OF THE ACCESS RESTRICTED AREAS AT LAND AND SEA IN THE GAZA STRIP

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PREMIERE URGENCE INTERNATIONALE

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3.List of Acronyms

AFD	Agence Française de Développement
ARA	Access Restricted Area
FAO	Food and Agriculture Organization of the United Nations
FGDs	Focus Group Discussions
GCF	Green Climate Fund
GDP	Gross Domestic Product
GMR	Great March of Return
GRM	Gaza Reconstruction Mechanism
IDMC	Internal Displacement Monitoring Centre
INGO	International Non-Governmental Organization
KII	Key Informant Interview
MoA	Ministry of Agriculture
NGO	Non-Governmental Organization
PADRRIF	Palestinian Agricultural Disaster Risk Reduction and Insurance Fund
PCHR	Palestinian Centre for Human Rights
PLO	Palestine Liberation Organization
PNA	Palestinian National Authority
PUI	Première Urgence Internationale
PWA	Palestinian Water Authority
SIF	Secours Islamique France
UAWC	Union of Agricultural Work Committees
UN	United Nations
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNOPOS	United Nations Office for Project Services
WFP	World Food Programme

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Executive summary:

This study was commissioned by PUI in December 2022, with the main objectives to describe the state and evolutions in the enforcement of Access Restricted Areas (ARA) of the Gaza Strip in the last decade, analyze the impacts on the affected population, describe existing coping strategies, define the most urgent humanitarian gaps, and propose the most relevant interventions to guide humanitarian and development actors in providing adequate and impactful assistance.

Findings show that the limits of the ARA, both at land and sea, vary over time and locations, with no clear and consistent definition of its size. At land, along the perimeter fence, Israel leaves the level of enforcement to be decided by the Israeli forces on the ground, based on their security perception in the different zones, which leaves the ARA communities having to adapt to unclear and varying levels of threat. At sea, the geopolitical context and security situation are the main determinants for the Israeli enforcement of the fishing area. The level of access is usually utilized as a political tool by Israel to enforce measures of collective punishment upon the Gazan population.

Numerous recurring incidents of international humanitarian law/human rights (IHL/IHRL) violations are reported yearly both at sea and land in the ARA.

Israeli forces often resort to the use of lethal and excessive force against civilians, including opening fire against Palestinian farmers, fishers, and herders working in the ARA. Other violations include arrest and detention of individuals, confiscation or destruction of assets, destruction of land through leveling, aerial spraying of herbicides, and the opening of water dams. The increase in the number of killing, injuries, and arrested civilians was particularly high during the period of the Great March of Return (GMR), between 2018 and 2019. Those numbers at land have then slightly decreased in the following years, although they remain significant. At sea however, the number of shooting and arrest incidents has increased in the last 3 years, as well as the incidents of assets confiscation. Analysis suggests that over the years, exposed populations have developed avoidance techniques to reduce their exposure to those protection risks, but which in turn impairs their capacity to freely access their livelihood sources.

Remarkably, more than one third of the total of persons targeted by IHL/IHRL violations are women and children, with children appearing clearly as a group particularly affected. Women and children in farming and herding households, who contribute significantly to the family's livelihoods, are regularly brought to enter the ARA lands, exposing themselves to major protection risks. These threats and risks exist also at sea, where although women fishers are very rare, it is common for boys under 18 to be employed on fishing boats.

The study confirmed the negative implications of the ARA-enforcement on the livelihoods of farming and fishing communities in the Gaza Strip. The ARA covers 17% of all land in the Gaza strip and up to 35 % of the agricultural land available. 22 communities depend mainly on the ARA, representing around 147,235 individuals. The ARA lands not only represent the main source of income for those households, they are also a major source of food production for consumption and export for the whole Gaza Strip. The value of losses in agricultural land along the restricted areas varies over time. At earlier stages of the enforcement of ARA until 2012, the lack of access to the ARA lands led to an annual loss of an estimated 75,000 tons of agricultural output, valued at around $50 million. Recent data from MoA shows that the losses are significantly lower. In 2020 the losses was only around 200,000 US$. The main reason behind such drop in the value of losses is the limited investment made in the area due to the high risk. In turn, the unauthorized fishing area represents around 85% of Gaza's maritime area. Restrictions affect directly 4,200 fishers, amounting to 23,520 household members. The consequence of the long-term ARA-enforcement on the fishing sector is major, as illustrated by the drop of 65% in the number of registered fishers witnessed in the last two decades. Despite major challenges at farm, household, and community levels, affected farmers and fishers survive through applying a wide range of coping strategies in the ARA. The three most frequent are the change of cropping patterns for farmers, the sale of assets, and the reliance on formal and informal loans.

The ARA enforcement has also affected the living standards through different ways where the quality of provided social services such as education and other domestic utilities (water and electricity) is poor in ARA communities. Moreover, the high-risk environment limits the willingness and capacity for investment in public infrastructure, leaving ARA affected communities even less equipped in social and public services than other areas of the Strip, thus enhancing the overall vulnerability of the populations and leading to increased risks of forcible transfer.

Most of the interventions to support ARA communities follow emergency humanitarian modalities, which, although they remain necessary, are of temporary effect and leave the targeted farmers, fishers, and herders without longer-term, resilience-building solutions. To achieve sustainable change, both emergency and development programming are needed, through coherent and integrated approaches. Emergency interventions are needed to provide the urgent support to the affected population to reduce the acute effects of the ARA enforcement on their livelihoods, while development, or at least early recovery interventions, are needed to support the sustainability of those communities' livelihoods and their resilience against different types of shocks and challenges. To do this, interventions should seek to strengthen institutional capacities and public services in the ARA; to enhance economic engagement of ARA affected communities into local markets; to support better management of natural resources and climate-adaptive production systems; and to scale up advocacy efforts highlighting the specific vulnerability and needs of ARA communities, as well as to raise awareness on IHL/IHRL violations and to advocate for the end of the ARA enforcement.

Introduction

Israeli occupation enforced the so-called access restricted area (ARA) on land along the fence of the Gaza strip with Israel and the sea fishing area. Consequently, farmers, herders, and fishers' right to sustain their economic activities are restricted and their lives are exposed to different types of threats and human rights violations. In addition to the restrictions on their economic activities, they are exposed to direct threats to their physical safety as well as the loss of their productive assets. The enforcement of the ARA has evolved during the last decades, with varying levels over time and for the five governorates. According to the latest UNOCHA definition, the risk area at land reaches up to 1,000 meters from the fence, including a no-go zone of 0-100 meters and an access only permitted on foot for farmers from 100m to 300m (distances that are often considered as underestimated by farmers and stakeholders, for whom the risk zone at times extends up to 1,500m and the high-risk one up to 500m). In turn, the allowed fishing zone at sea ranges between 3 and 12 nautical miles. This means that at its maximum level of enforcement, the ARA on land represents 17% of the Gaza Strip's territory and 35% of its agricultural lands, and at sea it represents up to 85% of the fishing zone.

Several studies and reports have described the recurrent violations of basic human rights occurring in the ARA and their various negative impacts on the livelihoods of the affected population. In 2010, OCHA and WFP published a report entitled: "Between the Fence and a Hard Place: The Humanitarian Impact of Israeli-imposed Restrictions on Access to Land and Sea in the Gaza Strip". Premiere Urgence Internationale (PUI) seeks to update this study, reflecting the changes in the enforcement of ARA, analyzing the impacts on the affected population, describing existing coping strategies, defining the most urgent humanitarian gaps, and proposing the most relevant interventions to guide humanitarian and development actors in providing adequate and impactful assistance.

2- Study objectives and methodology

2.1 Objective

This study aims at providing an update of ARA context reflecting protection risks and impact of ARA-enforcement on livelihoods of affected people, and exploring opportunities and recommended intervention strategies to support the resilience of affected communities.

Specific objectives

The study addresses the following questions:

- What are the protection risks faced by Palestinians in the ARA?
- What are the changes and major trends since the 2010 UN-led study on the ARA?
- What are the key vulnerabilities, challenges, and threats faced by the different groups living and working in the ARA?
- What are the main gaps and priority needs of the different livelihood groups?
- What are the main livelihood coping strategies adopted by the different groups?
- What are the impacts of ARA-enforcement and the associated IHL/IHRL violations on the environment, access to water, access to land, access to energy, and public health?
- What are the main recommendations for future emergency, recovery, and development interventions?

2.2 Methodology:

The study integrated both secondary and primary data to reflect the changes occurred during the last decade in the ARA and the impact on the living standards of the most affected people. The study started with a comprehensive desk review of all relevant reports, studies, and statistics on the changes of the context in the targeted areas and the implications on the affected population. Primary data collection and analysis followed a qualitative approach targeting key stakeholders and affected populations including farmers, fishers, and herders in the ARA.

2.2.1 Secondary data collection

Desk review of secondary data covered reports and studies reflecting protection, livelihoods, coping mechanisms, and potential intervention strategies within the ARA. Two main studies were the basis to reflect the changes over the last decade. The first study was led by UNOCHA in 2010 and the second was conducted by PUI in 2016. Reports from human rights institutions presented good sources to reflect all types of rights violations in ARA. PUI, PCHR, and Al Mezan have developed a human rights violation reporting system with good outreach to all ARA areas including sea and land ARA enforced areas. List of reviewed secondary data are presented under annex 5.

2.2.2 Primary data collection tools used in the study

Primary data collection: Primary data collection utilized KII and FGD targeting all stakeholders including affected communities, ministries, UN-agencies, local and International NGOs, local municipalities in the ARA areas, key figures from the affected population, experts, and human rights institutions. The primary data collection activities involved ARA affected population and main stakeholders through the following data collection process:

- Key Informant Interview (KII): Interviews were designed to reflect the current situation of the affected population and the impact of ARA enforcement on livelihoods. Additionally, the gaps, opportunities, and barriers were investigated. KII interviews targeted both community representatives and duty-bearers. The source and type of organization are explained in table 1. List of interviewed key informants are presented in annex 1.
- The tools are annexed in annex 2.

Table1: source and type of information obtained from stakeholders.

Actor	Information
PUI	▪ Review the objectives and scope of the study and expected outputs. ▪ Discuss the conceptual and methodological framework. ▪ Set the coordination and communication mechanism with stakeholders.
National ministries and local municipalities	▪ Definition of ARA and how it is perceived by National authorities? ▪ The enforcement level over time and in the different governorates? ▪ Impact on public and social services (education, health, power, water, wastewater, etc. ▪ Related national policies, capacities to protect affected population? ▪ Level of participation of the affected communities to reflect their needs, design and implement responsive interventions? ▪ Existing program to support the affected people ▪ Gaps in interventions and capacities of national institutions
Human rights institutions	▪ Definition of ARA and the legal stand of its enforcement. ▪ Types of violations and hazards affecting the population. ▪ Regularity and dissemination of reported rights violations. ▪ Advocacy programs and their impact. ▪ Protection interventions and their effectiveness. ▪ Gaps in interventions and recommendations.

Actor	Information
International and National NGOs	▪ Situation analysis and need assessment conducted in ARA? ▪ Definition of the ARA-based affected people, types of impacts, and volume of impacts? ▪ Impact of ARA-enforcement on the access to natural resources and economic activities? ▪ Interventions conducted to support ARA-based affected people ▪ Existing gaps and challenges to be addressed. ▪ Barriers limiting the protection and support to ARA-based populations.

- Focus Group Discussions (FGDs): FGDs were conducted to investigate the impact of ARA enforcement on the affected communities and understand the coping strategies, describe the gaps, potentials and needs within different groups living/working in the ARA. 7 FGDs were conducted to reflect the diversity of the targeted groups including farmers, fishers, and herders. Participants disaggregated in the 7 FGDs are annexed in annex 3. FGDs guiding questions are annexed in annex 4.

Table2: FGD targeted population and type of collected information

Actor	Questions
Farming communities: 4 FGDs (women, men, and youth in three governorates North, middle and south) **Fishers:** **1 FGD with fishers in Gaza governorate.** **Herders:** **2 FGDs (women, men, and youth in Gaza and middle governorate.**	Definition of ARA and how it is perceived by the local communities. Types of hazards and risk exposure in the area? Restricted access to resources and economic activities and the impact on livelihoods? Impact of received public and social services? Coping mechanisms developed by affected people? The support received from different actors (national and international, governmental, and non-governmental institutions) Level of participation and ability to reflect their needs and design responsive measures. Gender specific concerns/ needs and possible tailored interventions. The impact on people with specific needs Recommended interventions by different actors?

3- Defining the restricted areas and affected populations

3.1 Land Restricted Areas

According to Oslo Accords in 1993, Palestinian National Authority (PNA) and the Israeli government agreed on the following: at land, a security perimeter was to be established along the fence. No new constructions were permitted within 100m and strict building restrictions applied to the next 500m. Based on the Israeli forces information, Israel's efforts to impose what was referred to as a "buffer zone" and is now more widely known as the "access restricted areas" (ARA), began after implementation of the disengagement plan in September 2005. The boundary of the "buffer" area was, according to repeated Israeli declarations, 300 meters from the eastern and northern perimeter fence of the Gaza Strip. However, facts on the ground demonstrate that the Israeli forces have attacked civilians, properties, and objects even at a distance of up to 1.5 kilometers from the fence. According to reports by the UN Office of the High Commissioner for Human Rights, the ARA covers approximately 62.6 square kilometers—approximately 35% of Gaza's cultivable land and 85% of its maritime area—making these areas totally or partially inaccessible to Palestinians.

The limits of the ARA defined by the government of Israel have no clear or consistent definition and vary according to the period; Palestinians are informed of new limits in the zone by leaflets dropped by airplanes and released military statements. On land, farmers reported being able to access land up to 300 meters from the fence. But fairly safe access seems only possible during daylight hours (from around 7.00 to 15.00) and incidents have been recorded as far as 1.5 km from the fence by INGOs and Human Rights associations such as Al Mezan Center for Human Rights and the Palestinian Center for Human Rights.

The most recent OCHA map, shown in figure 1, of land restricted areas along the fence with Israel shows the categorization of the land area into three zones. The first zone is the 100 meters which is defined as "no go zone" where no movement is allowed while the second zone is from 100 to 300 meters where farmers only are allowed to access by foot. The situation on the ground reveals a third zone where land use is restricted and this zone extends from 300 meters to 1,000 meters. In some localities it has wider depth. The restriction on the height of the plants and construction in ARA zone is not formally stated in any document. However, the Israeli forces enforce this through military operations and incursions to destroy any trees or assets that can prevent vision along the perimeter fence.

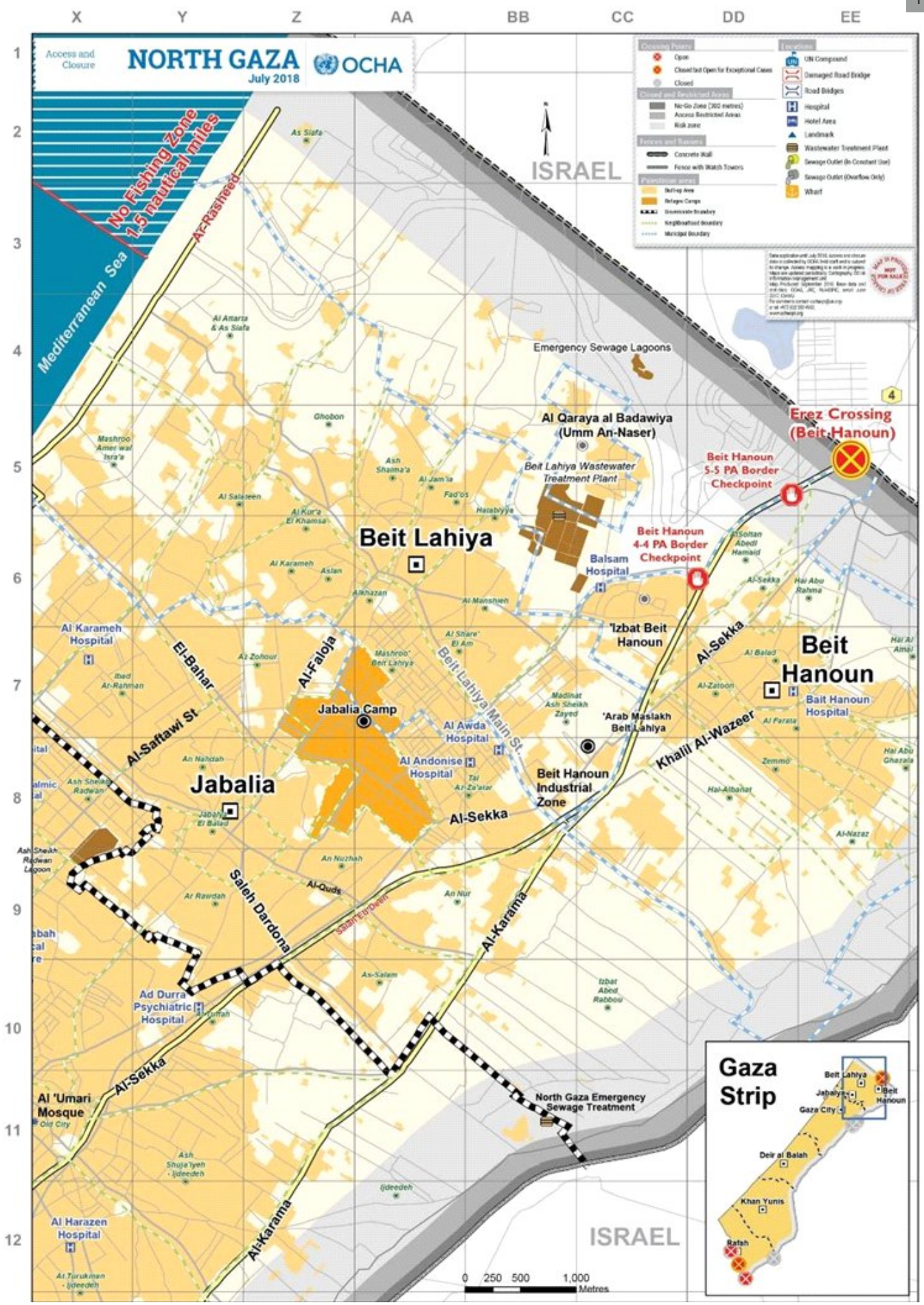
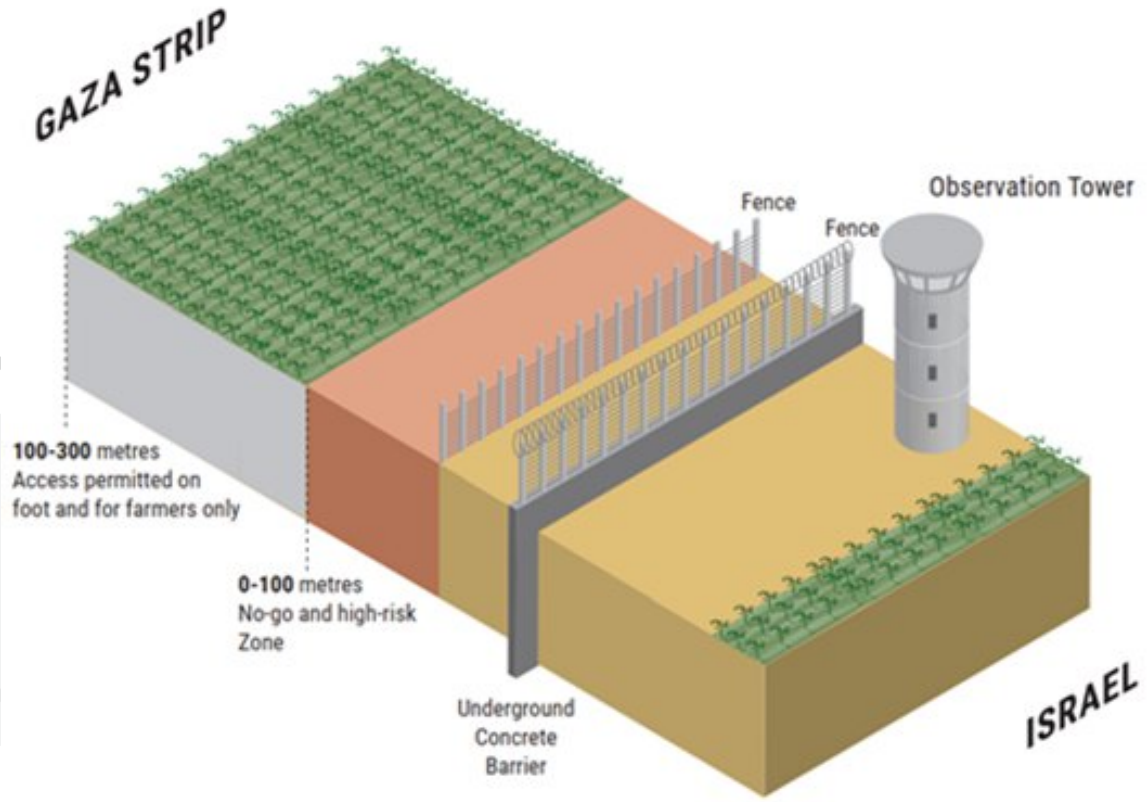


Figure 1: Israel's perimeter fence and access restricted area in the North Gaza area
Source: UNOCHA Atlas Map 2018

ISRAEL'S PERIMETER FENCE AND ACCESS RESTRICTED AREA



All the interviewed stakeholders including the population of ARA confirmed the vague definition of the ARA, as Israel is not willing to formally define the depth of this area and leaves the level of enforcement to be decided by the Israeli forces on the ground based on their security perception in the different areas. The depth of land restricted areas varies among different geographical locations along the fence. 22 communities are defined as ARA-based along the perimeter fence. All the affected people within this area are working in agriculture.

According to the Dalia study that was conducted in 202015, the communities are: Burij, Shuka, Fukhary, Qarara, Maghazi, Bani Suhaila, Bait Hanoun, Juhr Deek, Khuzaa, East of Salah Deen-North, East of Salah Deen-Middle, East of Salah Deen-Khanyounis, East of Salah Deen-Rafah, East of Salah Deen-Gaza, Abbasan Jadida, Abbasan Kabira, Wadi Salqa, Mashrou Bait Lahya, Zaitoun, East of Bait Hanoun, Ezbat Abdrabbo, Shijaia-IJdaida, and Shijaia-Turkman. Farmers within these areas understand that the first 300m of the ARA zone are hazardous and activities are restricted. In this zone farmers are only allowed to cultivate seasonal crops that are shorter than 100 cm while in the second zone up to 1,000m they have more flexibility in activities but those are still risky. Participants in farmers FGDs stated that they are exposed to Israeli gunfire regardless of the distance from the fence. The width of the ARA zone is decided based on the field circumstances and security development.

3.2 Restricted sea areas

Under the 1994 Gaza-Jericho Agreement between Israel and the PLO, areas within 20 Nautical Miles (NM) off Gaza's coast should be open to Palestinian use for fishing, recreation, and economic activities. Since the beginning of the second Intifada in 2000, there has been a progressive restriction of fishers 'access to the sea. In 2002, Israel committed to allow fishing activities at sea up to 12 NM from shore (Bertini Commitment); however, this commitment was never implemented and more severe restrictions were imposed most times subsequently. Palestinians are totally prevented from accessing 85% of the sea areas on which they are entitled to carry out maritime activities, including fishing, according to the 1994 Gaza Jericho Agreement.

Based on UNOCHA key facts in June 2022, Israeli forces restrict access off the Gaza coast, currently only allowing fishers to access 50% of the fishing waters allocated for this purpose under the Oslo Accords.

According to the fishers FGD, the restricted access to fishing area varies over time and locations. Fishers complain that Israeli Navy forces impose restrictions even in the areas that are “allowed” for fishing (before the 6 or 15 NM). Several incidents show that fishers had to leave their netting while they were in the “allowed” fishing area. Fishers' weak technical capacities limit their ability to define the safe limits for fishing and to control their boats beyond the allowed fishing area. The fishers complained that their GPS devices are old and not accurate. Therefore, they limit their fishing activities in more restricted areas to avoid Israeli attacks when they are close to the allowed fishing zones.

The geopolitical context and security situation are main determinants for the Israeli enforcement of the fishing area. The level of access to fishing area is usually utilized as a political tool by the Israeli government to enforce measures of collective punishment upon the Gazan population. According to OCHA's recent map in 2022, shown in figure 2, there are 'no fishing zones' along southern and northern limits while fishing is allowed in 6 nautical miles in the northern governorate and expands to reach 15 nautical miles in the middle and southern governorates. This was the last updated formal enforcement level by the Israeli forces in January 2019. On the ground, the buffer zone usually starts beyond 6 nautical miles, but incidents have been reported at less than 6 nautical miles from the coast.[3] In April 2016, allowed fishing area was extended up to 9 nautical miles for a 2-months period but incidents – including a shooting resulting in a casualty - happened only 3 nautical miles from the shore.[3]

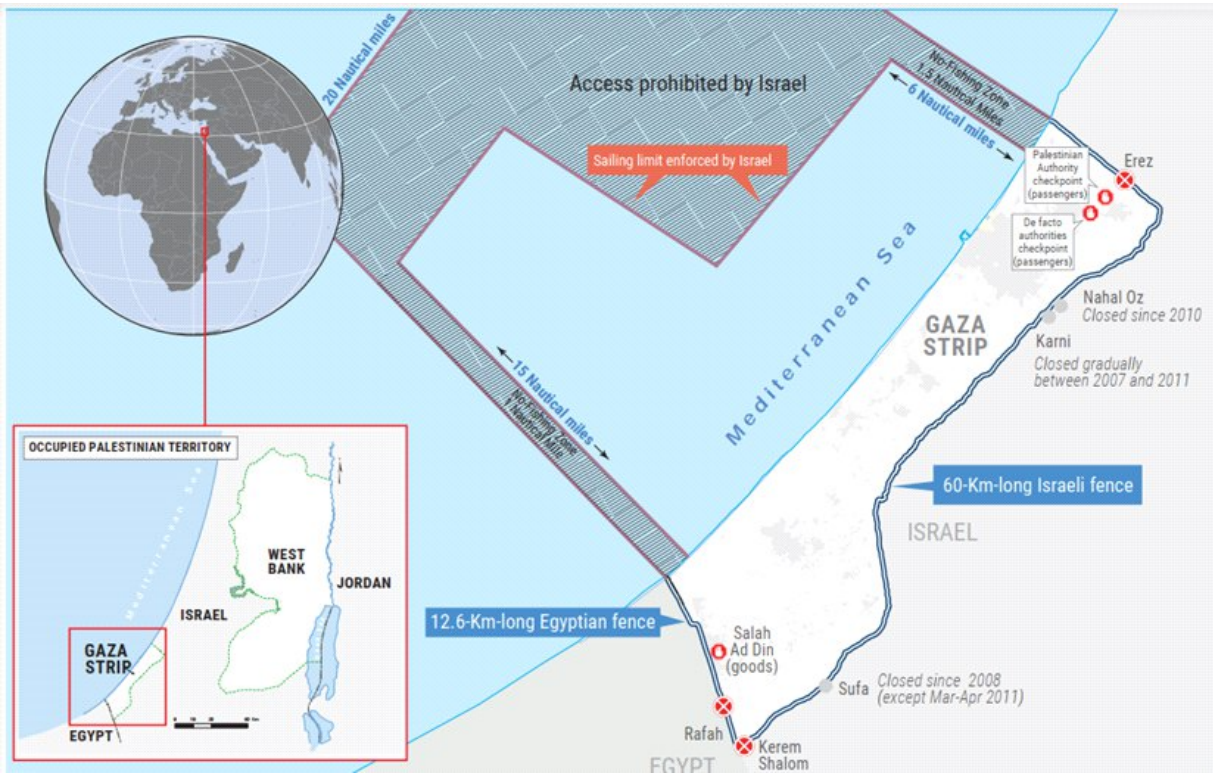
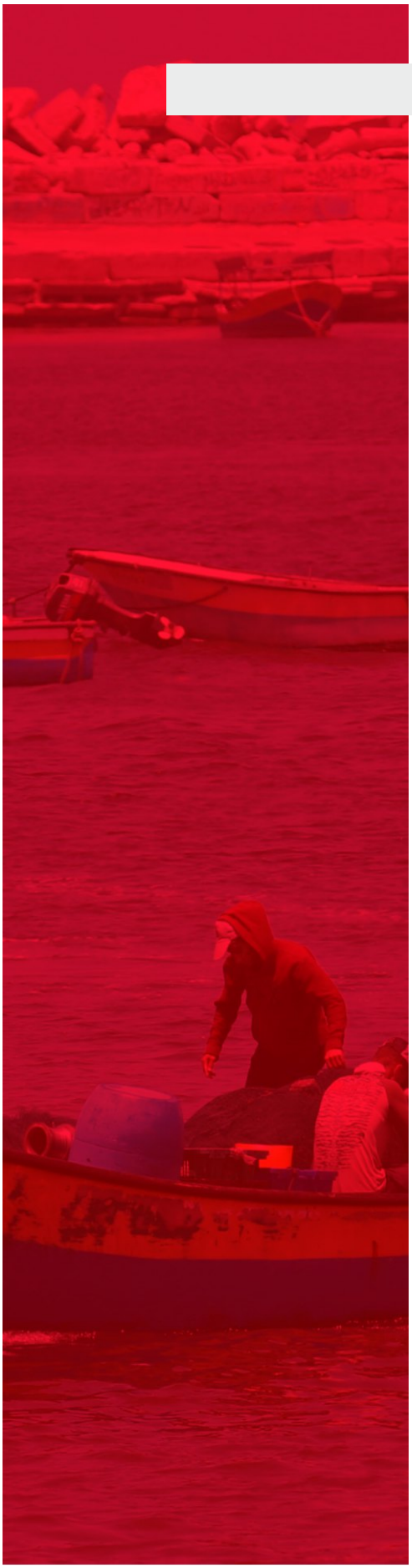


Figure 2: Sea access restricted area in Gaza strip.
Source: OCHA OPT Map 2022

3.3 Affected populations

According to a UNOCHA study conducted in 2010, the zone classified as highly dangerous, extends westward from the fence to a distance ranging between 500 and 1,500 meters inside the Strip. It starts at the northern perimeter fence along the outskirts of Beit Lahiya and Um An-Naser village and continues along the northern and eastern parts of Beit Hanoun. It continues along the eastern perimeter fence with Israel to reach the southern borders with Egypt.



The number of affected communities in the ARA is 22. As shown in Figure 3, the ARA affects all the five governorates and communities in 20 municipalities. Various types of population are affected, including landlords, farmer tenants, and herders. According to a recent study conducted by Dalia association in 2020, the number of agricultural holdings in the ARA area is 26,292. Table 3 shows the number of agricultural land holdings and size of holding per each area in ARA, whereas, the total agricultural holdings in ARA reach 26,292 and the total size reach 84,081 dunams. This reflects the number of families owning lands and livestock in the ARA. Considering the average family size of 5.6, the total population in the ARA land area is 147,235 individuals.

According to the Ministry of Agriculture (MoA), the number of officially registered fishers in Gaza strip is 4,200 persons. Considering the average family size, a total of 23,520 persons are affected by the fishing areas restrictions. In total 170,755 persons are directly affected by both sea and land ARA in Gaza strip. This stands for about 8% of the total population of the Gaza Strip. The number of courses increases significantly when counting other market actors along the agricultural and fishing value chains and the lost opportunities using the restricted resources.

Figure 3: ARA Affected Communities
Source: OCHA OPT

Table 3: Agricultural holdings within ARA affected communities.

Area	Total no. of agricultural holdings	Size of holdings/donum
Burij	486	1,983
Shuka	1,431	5,063
Fukhary	1,155	8,002
Qarara	2,857	5,463
Maghazi	161	9,770
Bani Suhaila	2,503	3,071
Bait Hanoun	1,708	8,073
Juhr Deek	470	2,281
Khuzaa	2,161	2,327
East of Salah Deen-North	166	2,603
East of Salah Deen-Middle	684	2,374
East of Salah Deen-Khanyounis	3,417	9,276
East of Salah Deen-Rafah	663	6,250
East of Salah Deen-Gaza	442	1,567
Abbasan Jadida	1,192	2,591
Abbasan Kabira	3,570	4,084
Wadi Salqa	610	3,335
Mashrou Bait Lahya	57	44
Zaitoun	676	1,817
East of Bait Hanoun – Ezbat Abdrabbo	1,442	3,511
Shijaia-IJdaida	228	461
Shijaia-Turkman	213	135
Total	26,292	84,081

Six Bedouin communities live near ARA and depend on grazing in the ARA lands. These are Um Al Nasir village, Johr Eldek, Wadi Gaza, Wadi Al Salqa, Al Fukhari and Al Shuka. No numbers are available on the herders population in Gaza strip, as the sector is informal and involves only seasonal grazing, and not only in ARA but also inside other rural areas. Herders are usually searching for uncultivated land where they can find weeds for their animals. They reported that they are not allowed to go beyond the 300m zone. They were exposed to Israeli gunfire and reported occasional losses of livestock. They also complained that they were not welcomed by ARA Affected Communities the farming communities in ARA, as their animals eat the crops of the farmers.

4-Protection Concerns

Amongst the main measures adopted by Israel to maintain the no-go zone is the permanent presence of Israeli soldiers stationed in watchtowers behind the separation fence. Notably, the Israeli military often resorts to the use of lethal and excessive force against civilians, including opening fire against Palestinian farmers working on their land located in the ARA.
The Israeli military enforces the access restrictions by targeting civilian individuals, properties, and objects with various types of weaponry and artillery. In addition to the repeated attacks targeting them directly, Palestinian farmers working in the ARA are confronted with continuous raids by Israeli forces and the destruction of their farmland through leveling, aerial spraying of herbicides, and the opening of water dams.

The Israeli authorities continue to impose naval blockade along the Gaza Strip shores, as they allow sailing and fishing only within 3-15 nautical miles. Israeli authorities have reduced the permitted fishing area to 3 nautical miles, or completely closed the sea more than 20 times. As a result, fishers were denied access to the areas where fish breeds. According to PCHR's follow-up, despite Israeli authorities' permission to partially extend the permitted fishing on 01 April 2019, their policy towards fishers has not changed. Israeli naval forces continued their attacks against fishers sailing within the permitted fishing area. Dozens of shootings and chasing incidents against fishing boats were reported, causing injuries among fishers.

As shown in the tables 4 and 5, the number of Israeli attacks against farmers and fishers have decreased in the last five years. During 2018 and 2019 the number of killing, injuries and arrests were particularly high, as 294 were killed, around 20,000 were injured and 159 were arrested. The significant increase during this period is linked to the Great March of Return (GMR). The cases who were reported in the ARA were mainly civilians who participated in GMR demonstrations along the perimeter fence. They were not farmers or herders owning or working on lands in the ARA, and therefore they do not strictly speaking reflect "regular" ARA-enforcement measures. Indeed, after the end of GMR, the number of reported targeting in ARA-lands witnessed a significant decrease. In the last three years, 19 cases were killed, 159 were injured, and 88 were arrested. However, numbers are still high in regards to shooting and arresting incidents targeting fishers.

In the last three years, increasing the fishing area for fishers has commonly been associated with an increased incidence of attacks by the Israeli forces to the fishers. The level of commitment of fishers to the ARA-enforcement at sea is only controlled by the Israeli forces, who can take action against fishers even when they have not reached the "allowed" limit for fishing. Fishers have reported that they were attacked several times while they were not close to the "allowed" fishing limits.

In recent years, the number of Israeli attacks against farmers and fishers has witnessed a slight decrease, which might be linked to an acquired awareness over the years and the adoption of certain strategies to deal with the risky situations they might face. Both farmers and fishers reported that they had accumulated experience in managing the constraints linked to the enforcement of the ARA, and that they had increased awareness on how to manage the associated risks. Most recently, the farmers in the ARA were asked by Gaza Authorities to wear a jacket to be marked as farmers who are allowed to access their land for agricultural activities. This has helped improve safe access to the land, but still did not resolve the risk of being exposed to attacks. All interviewed farmers and herders complained about the frequent use of tear gas, which forces them to leave their land until the gas effects end.

Table 4 shows number of Israeli forces attacks in ARA land in the period of 2018-2022 based on Al Mezan center for Human Rights statistics:

	2018			2019			2020			2021			2022		
	Total	women	Children	Total	women	Children	Total	women	Children	Total	women	Children	Total	women	Children
Bombardment and shooting	1033	0	0	987	0	0	848	0	0	599	0	0	637	0	0
Incursions	92	0	0	59	0	0	55	0	0	46	0	0	42	0	0
killing	242	0	0	52	1	13	6	0	2	6	0	1	7	1	0
Injuries	13808	598	2862	5650	241	2063	34	0	13	11	0	34	15	5	6
Arrested	64	0	22	95	0	31	25	1	5	31	0	7	32	0	15

Table 5 number of Israeli forces attacks on the fishers in the period of 2018-2022 based on Al Mezan center for Human Rights statistics:

	2016*	2017*	2018		2019		2020		2021		2022	
Shooting incidents	1700	100	325		347		308		313		474	
Arrest incidents	135	39	23		17		4		5		17	
Number of persons arrested			Total	Children	Total	Children	Total	Children	Total	Children	Total	Children
	0	0	94	6	35	3	10	1	12	2	64	8
Killing	0	2	2		0		0		0		0	
Injuries	30	21	20	0	16	2	12	0	5	0	16	3
Confiscation incidents			18		14		6		5		16	
Number of boats confiscated	45	13	23		15		4		6		23	
Assets Damaging (boats, nets, lights, generators)	1315	121	9		11		12		3		10	

*UAWC reports

5-Impact on Livelihoods

The ARA lands represents a major source of income for ARA-based households, and is generally a major source of food for the whole Gaza Strip and the Gaza Strip export capacity. According to the Internal Displacement Monitoring Centre (IDMC), the ARA covers 17 % of all land in the Gaza strip and up to 35 % of agricultural land available. Until year 2012, the lack of access to the ARA led to an annual loss of an estimated 75,000 tons of agricultural output, valued at around $50 million.[1]
Decline in the fishing area as a result of the ARA enforcement has affected the fishing catchment and consequently the income of fishers and their families. The implications of the ARA enforcement on land and sea have significant implications on the livelihoods of farming and fishing communities in the Gaza Strip.

5.1 Farmers

5.1.1 Access to productive assets

Palestinian farmers have been prevented from freely accessing their land, cultivating their fields, and having a stable source of income. The restrictions imposed by Israel as occupying power have resulted in considerable losses for Palestinian farmers, leading to a sharp decline in their economic conditions, as well as higher rates of unemployment, poverty, and food insecurity.

According to an IDMC report, farmers said that they had experienced a sharp decline in the quality and quantity of food they were able to cultivate or buy since 2006.

Farmers who used to lease their plots while they worked in Israel and those who grew high-yield produce for export, such as citrus fruit, strawberries and olives, have suffered losses of income to the extent that they are no longer able to invest in agricultural production. Those who rented land or depended on subsistence farming are no longer able to access their plots to grow crops or breed sheep to meet their own needs.[2]

Farmers in the ARA area are categorized into two groups, landlords, and tenant farmers. The results of FGDs have revealed that the enforcement of ARA has affected the value of the land and its economic return in several ways:

1-Significant change in cropping pattern has taken place as a result of restricted land use, preventing cultivation of productive trees (or at least putting the cultivated trees at risk of destruction in case of incursion). Farmers prefer to go for wheat production or open-field vegetable crops instead of olive trees or high value cash crops.
2-Lack of water resources and limited ability to invest in well construction or purchasing water resources.
3-High risk of damage/destruction to crops which discourages the farmers to go for high value products and prefer to go for low-cost production, which produces lower income.
4-Low productivity and high risk in the ARA were main causes for lowering the land rental value in the area. 1 dunam of land in ARA is rented in average for only 50 JD per year, which is 50% lower than the average land rent in the Gaza Strip.
5-Many landlords prefer to neither cultivate their land nor to rent it out, and leave the land without productive activities. The low rent and potential conflict with tenant farmers are the main reasons for the lack of willingness to rent their land out.

5.1.2 Loss of assets

According to MoA records, the sum of the area of all farmlands affected by leveling operations between 2018 and 2020 is 1,035.69 dunams. In terms of financial losses, the total damages caused by leveling operations over the same period amounts to USD 1,189,802. Among Gaza's five districts, North Gaza—which endures access restrictions in both its northern and eastern areas—had the largest share of leveling operations, with an affected farmland area reaching 593.68 dunams (Table 6).

One of the most recent attacks of this kind occurred on 13th of October, 2020, when the Israeli bulldozers entered up to 300 meters into the Gaza Strip and damaged dozens of dunams of agricultural land, destroying crops and irrigation systems. According to Al Mezan, this incident is the most serious that has occurred in the agricultural lands of the Gaza Strip since 2014, in which roughly 32,000 USD worth of crops and farmland were damaged, harming at least ten farmers' sources of income. Later on, on 16th of December 2020, Israeli military bulldozers crossed the perimeter fence again east of Khan Younis and reached up to 200 meters into agricultural lands in Abasan al-Kabira, Khuza'a, and al-Fukhari, razing and leveling Palestinian lands and crops.[8]

Table 6: Farmland affected by leveling operations (dunams) and consequent economic losses (USD)

	2018		2019		2020	
Governorate	**Affected areas**	**Total damages**	**Affected areas**	**Total damages**	**Affected areas**	**Total damages**
North Gaza	16	27.305	577.68	312.574	-	-
Gaza City	12.11	63.037	34.51	120.020	-	-
Deir al-Balah	-	-	19.5	109.785	-	-
Khan Younis	14.56	48.560	69.81	215.983	84	184.985
Rafah	141.45	71.930	63.07	25.615	3	10007.5
	184.12	**210.832**	**764.57**	**783.977**	**87**	**194992.5**

Source: Palestinian Ministry of Agriculture, Gaza Strip (2020)

Israeli forces carried out 17 aerial sprayings of herbicides, causing damage to approximately 4,936,867 square meters of farmland. In 2020 alone, Israel carried out several spraying operations, and notably one between 14-16 January and another one on 5 April. Al Mezan reports that these two operations damaged crops at a distance of at least 600 meters from the separation fence, affecting more than 2,800 dunams of agricultural land and 350 Palestinian farmers, with an estimated total loss exceeding one million USD.[8]

According to MoA records, in January 2018, the Israeli forces flooded the lands of farms in the perimeter fence area (in North and Gaza governorates) by opening winter dams that collect rain water and wastewater east of the Strip in winter. The total affected land is 629 dunams with a loss value of 335,000 USD. This was stated by interviewed farmers who complained of the opening dams and the resulting floods causing losses of all investments in crops. In March 2021, MoA reported that Israeli forces opened the dams in the North and East of Gaza, affecting 118 farmers and causing losses worth 194,989 USD, as shown in table 7. Most recently in December 2022, news reported the opening of dams and flooding affecting communities in the middle governorate. Although the damages are not assessed yet, this incident reflects the continuity of dams opening practices by Israel over the years.

Table 7: Farmland affected by opening winter dam (dunams) and consequent economic losses (USD)

Area	Affected areas / Dunams	Total damages / USD
North Area	26	27,514
East of Gaza	596	167,475
Total	622	194,989

5.1.3 Risky investment

All farmers and owners of ARA lands fear investing in their farming activities as they consider the threat of losing their assets to be significant. This causes significant loss in the market opportunity for arable land in ARA, which has a significant economic potential. The fear to invest is not limited to the farming communities but also to many national and international agencies who avoid funding any assets in the ARA due to the associated risk of accessing the area as well as the fear of losing the donated assets. This lack of investment is associated with the lack of water resources in the area. With higher impact of climate change on ARA because it consists of open areas with no high-rise crops or trees (due to ARA-enforcement measures), farmers are not able to invest in climate adaptive production systems such as greenhouses, low agricultural tunnels, or advanced irrigation technologies. All these systems require high investment while some of them are not allowed in the first and the second zone along the perimeter fence.

5.1.4 Limited water resources

Access restrictions do not allow farmers to freely make use of their land for farming. In addition to this, access to water is also limited due to the fact that the water infrastructures (wells, irrigation systems, etc.) have been substantially damaged by the consecutive wars on Gaza and were not rehabilitated given the perceived probability by farmers, aid agencies, and donors that those investments would be destroyed again in case of another war or by Israeli forces during incursions. The high cost of electricity and limited supply exacerbates the water shortage problem.
Based on the results of data collected in FGDs and key informant interviews, as well as a recent study conducted by Dalia association, table 7 illustrates the issue of water resources availability in ARA communities:

Table 8: Water resources in ARA areas.

Area	Al Shuak and Al Fukhari	Abasan al Kabeera, Abasan Al Sagheera, Al	Johr El deek and Eastern Gaza	Beit Hanoun, Beit Lahia and um Al Nasir
Water resources	Limited water resources. Water is transported from middle and western khan Younis at a high cost and with low quality.	More water is available but still in insufficient quantity and with a high level of salinity and high pumping cost.	Water is available but with high salinity level and at high cost. They buy water for 30 ILS per hour. Supply is a problem due to limits in electricity supply.	Water is available but with high salinity level and at high cost.

It is worth mentioning the existing efforts to provide treated wastewater to the farmers in the ARA to irrigate their crops. Three treatment plants are established along the eastern fence with Israel with the potential to use the resulting treated wastewater for irrigation. Currently, AFD and GCF funded program (conducted by FAO and PWA) works on a recovery water program to irrigate 5,000 dunams in Eastern Jabalaia. The project is designed to utilize treated wastewater infiltrated into the ground water and pumped from recovery wells to be delivered to farmers to irrigate their farms. Farmers in the FGD in the targeted area expressed their satisfaction with the project but they complained about the price of water. Many farmers in the targeted area will benefit from shifting from rain-fed farming into irrigated cropping which generates significantly higher income. The project is under implementation phase but water supply has not started yet. The plan is to develop a water user association to manage the water pumping and distribution system to the farmers and the collection of water supply fees. Another upcoming project is planned to serve the ARA farming communities in the middle and southern areas with the same technology, but is still not operating.

5.1.5 General challenges that affect agricultural sector

Farmers' complaints are not limited to the ARA related challenges but integrate other challenges that affect productivity, profitability, and farming income. These challenges have a great impact on the livelihoods of farming families as it compounds ARE-related constraints. Among major general challenges stated by the farmers in FGDs are:

1-Plant diseases and the need to apply expensive pesticides. This increases the production cost and decreases farm income. Additionally, it affects the marketability of agricultural products.

2- Climate change and its impact on the productivity of crops and the quality of the products. The impact of climate change on ARA seems to be of higher effect as ARA lands consist of open areas with higher exposure to climate change effects and environmental degradation.

3-The high cost and low quality of agricultural inputs including seeds, fertilizers, and pesticides. The unavailability of local 'Baladi' seeds is one of the major issues mentioned by the farming community. Additionally, farmers complained that the quality of inputs is not monitored by MoA.

4-Low and fluctuating market prices for their products. Farmers cannot predict market prices of their products and they have to accept those even if they do not cover their production costs.

5-Limited marketing channels for the agricultural products caused by the restrictions on exportation of agricultural products and limited processing capacities in the local context. This has resulted in significant deterioration of market prices.

5.2 Fishers

Israeli naval forces aim at restricting and preventing fishers from practicing their work and even targeting their livelihoods. Consequently, the fishing sector in the Gaza Strip has been unable to contribute effectively to the Palestinian economy, as its contribution in the Gross domestic product remained very limited, in comparison with previous years in which the fishing sector was a fast-growing sector.

The total number of authorized fishers is of 4,200 individuals, who have the permission to enter the sea and practice fishing, segregated as 48.7% in Gaza and North Gaza governorates, and 51% in South and middle Gaza Governorates. 1,744 boats are functional, as shown in table 8, including 945 unauthorized motorized boats and between 800-900 boats unauthorized and without engines.

Table 9: The fishing capacities in Gaza governorates.

Port / Boat	Trawler	Purse seiner	Vessels with outboard engine	Fluca	Small oar boat	Total
North area	0	0	32	0	126	158
Gaza City port	15	45	453	7	173	692
Deir Al-Balah	0	1	149	1	231	382
Khan Yunis	0	5	109	14	156	284
Rafah	0	6	118	11	93	228
Total	15	57	861	33	779	1744

Source: MoA

The "allowed" fishing area was determined as 6 NM from Gaza until the North of the Gaza, and of 15 NM from Gaza until Rafah, based upon the last analysis conducted two years ago. Fishers can usually define the allowed fishing areas by using GPS, but marine currents expose them to the risk of facing Israeli vessels or being shot or injured by moving the boats to the prohibited areas in the sea.

It is reported that restricting the permitted fishing area prevented fishers from sailing and fishing freely, as half of the fishers (2,000) practice their work intermittently, once a week or a month, because the income from their work does not cover their operational costs. This undermines the livelihoods of 4,160 fishers and 700 workers in professions associated with the fishing sector, representing a total of around 27,700 households members affected.11

Aside from denying them access to food and livelihoods, Israel's enforcement of the ARA at sea also exposes fishers to forced displacement, threats to their personal security, detention, and the damage and confiscation of their property.

As a result, thousands have abandoned their trade. There were approximately 10,000 fishers registered with Gaza's fishing union in 2000. Today, there are just 3,500, a drop of 65% over two decades.1 Based on MoA records, the number of fishermen has increased during the last years. Despite the threats, it was noticed an increase in the number of fishers who have newly engaged in this profession during the last five years. This can be linked to the deteriorating economic situation in almost all economic sectors which make fishing activity an opportunity even when it generates low income and entails significant protection risks. Additionally, the inheritance of fishing as a profession increases the number of fishers overtime.

According to the General Union of Fishing Workers in the Gaza Strip, the volume of fish production in 2019 was about 3,794 tons. Fish production during the last 5 years significantly decreased compared to the years preceding the Israeli-imposed blockade on the Gaza Strip, as the volume of fish production in 2007 was about 5,000 tons (shown in table 9). This is related to the continued Israeli attacks against fishers, including shooting, arresting and chasing them at sea, and reducing the permitted area for sailing and fishing. The following table 10 shows the volume of fish production in the Gaza Strip during the last five years (2015-2021).11 The production in 2007 reflects the situation before the siege and ARA enforcement. The reduction from 2007 to 2015 is 54%. The volume of production is fluctuating mainly due to the ARA enforcement, as well as some other determinants including the lack of management of the fishing area which is actually caused by the enforcement of ARA on the sea.

Table 10: fish production in the Gaza Strip in recent years vs. 2007

Year	Volume of fish production/Tons	Percentage of evolution compared to year 2007
2007	5,000	-
2008	3,117	-38
2009	1,856	-40
2010	1,699	-8
2011	1,468	-14
2012	2,036	+39
2013	2,421	+19
2014	2,858	+18
2015	2,300	-20
2016	3,630	+58
2017	3,306	-9
2018	3,038	-8
2019	3,794	+25
2020	4,707	+24
2021	4,660	-1

The correlation between the enforcement of ARA in fishing area and the volume of fish catchment over the last 25 years is shown in figure 4. As shown, there is a strong correlation between the restriction of fishing area and the amount of fish catchment. As shown in table 10, the reduction in fish catchment during the period between 2008 till 2011 was significantly higher than in other years. This is due to the more severe restrictions in the fishing area imposed in this period, as it was only 3 nautical miles. The situation was slightly improved during the period between 2012 and 2015 when the fishing area was expanded to 6 nautical miles. In the period between 2016 and 2018 the catchment improved slightly with the expansion of fishing area to reach 9 nautical miles. Indeed, between 2019 and 2021, the "allowed" fishing area was extended as compared to previous years, resulting in a higher fish catch on the exact period. This indicates the impact of Israeli sea ARA enforcement on the livelihoods of the fishers and their families.

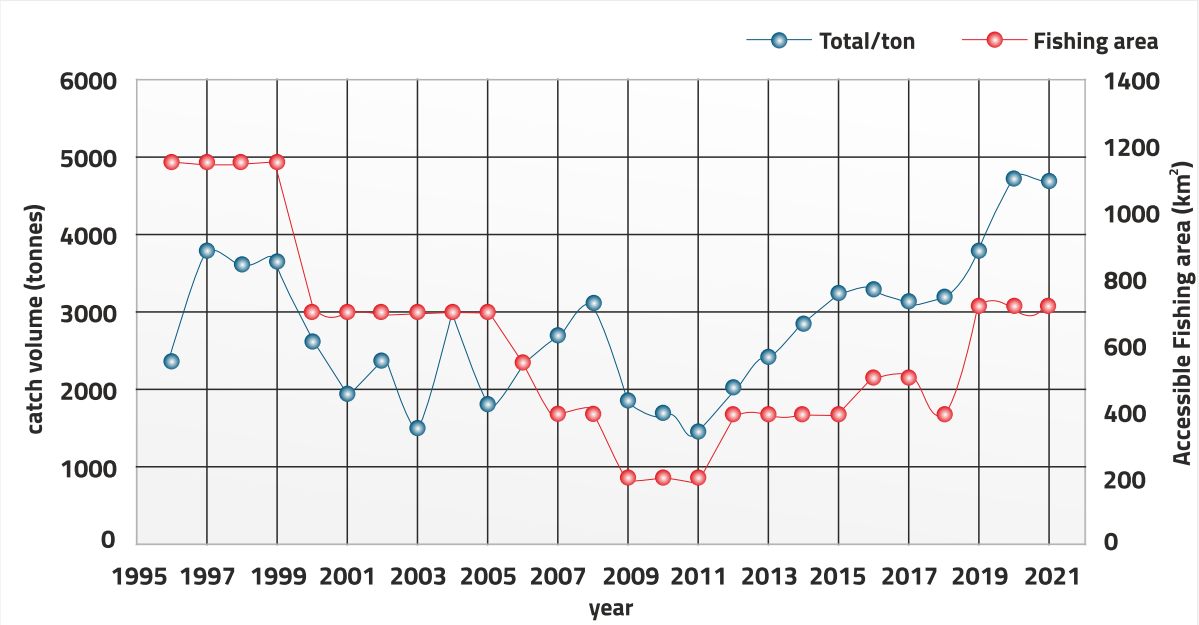


Figure 4: the correlation between the volume of fish catchment and ARA enforcement
Source: MoA, 2022.

Fishers in FGDs complained of the negative impact of fishing area restrictions on their ability to sustain their fishing practice. The cost of production cannot be compensated by the limited fishing catchment when they are not allowed to go beyond the 6 NM.

Israel has put restrictions on the importation of so-called "dual-use" items, that are used in all economic sectors. The listing remains vague, giving Israel flexibility to forbid a wide range of materials, severely affecting the performance of farming and fishing sectors. It includes boat engines and spare parts for mechanical settings of fishing boats as well as the fabrics used to maintain the boats bodies. Fishers complained that the Israeli restrictions on the importation of engines and spare parts for their boats limit their fishing capacities and decrease their ability to sustain operations. Old machines and boats limit the catch volume of fish even when fishers are allowed to go beyond the 6 NM. MoA and the fishermen's syndicate are trying to work on integrating the importation of boats engines and spare parts through GRM (Gaza Reconstruction Mechanism) which is monitored by the UN system. Recently, in November 2022, following sustained negotiations, the UN managed to secure the entrance of limited quantities of dual use material for boat repairs. Efforts to guarantee more sustained access are being pursued, but the issue remains major to this day and still affects the wide majority of Gaza fishers. This should encourage third parties (states, UN, INGOs….) to continue advocacy in this direction.

Fishers were also concerned about the compensation of their regular losses of assets. Through the MoA reporting and documentation system, they register their losses but there is no compensation for their losses except for some emergency programs that provide urgent monetary support. As such, PUI currently implements a project providing cash assistance to fishers affected by property damages or casualties as a result of ARA enforcement. PUI provides emergency MPCA to cover the basic needs of affected families as a first layer of assistance and then provides a conditional livelihood support to fishers and farmers in order to restore the affected livelihoods.

5.3 Herders

Herders are exposed to different types of risk while accessing the ARA. Actually, ARA lands represent a good opportunity for them, as it is arable land that is not fully cultivated. This allows for weed growth during the rainy season and thus a relatively good grazing area for Bedouin and herding communities in the Gaza strip. The limited surface of grazing areas in the Strip makes ARA an attractive option for herders even with the associated hazards. Herders going with their animals for grazing in ARA are exposed to different types of risk such as shooting by Israeli forces of themselves or their animals. Moreover, herders usually send the animals with women and children for grazing. Indeed, as stated by both men and women herders in FGDs, adult males are often working in other jobs including casual labor in agriculture, while the task of taking care of animals and grazing activities are considered as household tasks. Such tasks are often given to the women and the children as an additional burden to other household activities. Women in FGD stated that they sometimes send their children with sheep for grazing when they are busy with other household tasks. Unfortunately, there is no disaggregated gender and age data for herders targeted by Israeli forces in the ARA illustrating the scope and impact of this phenomenon.

5.4 Exposure of women and children to ARA-enforcement

Adding to the observations above on age and gender specific exposure to ARA-enforcement for herding communities, table 11 shows the percentage of all women and children targeted by the Israeli forces in the ARA in the last three years. Overall, more than one third of the total targeting are women and children, and children clearly appear as a group particularly affected. This demonstrates that even though men are often the main provider for the households and considered as head of households, women and children, in farming and herding households, contribute significantly to the family's livelihoods, and are regularly brought to enter the ARA lands, exposing themselves to protection risks. It demonstrates also that Israeli forces are not reluctant to target women and children despite their age and gender.

These threats exist also at sea. Although women fishers are very rare, it is not uncommon for boys under 18 to be employed on fishing boats, alongside other fishers. As shown in Table 5 above, 8 children were arrested in 2022 by Israeli forces while fishing at sea, and 3 were injured. No women were victims of incidents at sea.

This reflects the high relevance of protection programming and the consideration to be brought to these two groups, and especially children, in light of their degree of exposure to Israeli ILH/IHRL violations in ARA.

Table 11: the percentage of women and children targeted in ARA land and sea during the last 3 years.

Total		women	Children		Percentage of women and children out of the total
			Land	Sea	
Killed	19	1	3	0	21%
Injured	159	5	53	3	38%
Arrested	88	1	27	8	41%
Total	266	7	83	11	38%

There are currently 13 schools in the ARA, which employ around 280 staff and cater for around 4,500 students. There are seven schools between 500m and 1,000m from the fence and these are regularly having classes interrupted and classrooms damaged by gunfire and tear gas. Students and staff have been traumatized and left feeling insecure both at school and on their way to and from it. Regular Israeli incursions cause further anxiety, and a significant number of schools have been repeatedly damaged during periods of war. Many are yet to be repaired and in some cases shipping containers serve as temporary classrooms. Such hardships increase the risk of forcible displacement within those communities, and unless the impact on education is not mitigated, that risk will only increase. Possible protection concerns also arise as children continue to go to schools in insecure areas.

6- Impact on access to education

Farmers in FGDs also expressed important concerns regarding the cost of higher education, particularly given the fact that their children are under pressure to establish new livelihood sources because farming no longer appears like a viable option. Farmers' lack of income has often meant that their children had to take turns to study at university by attending alternate semesters. Other families have chosen to send their sons rather than their daughters, further increasing gender inequalities. 1

7- Impact on Utility Infrastructure

7.1 Wastewater Treatment Plants

96% of water from the aquifer in Gaza Strip is unfit for human consumption. The over extraction of groundwater through illegal individual wells (linked to increased pressure on land and lack of regulation) and groundwater and surface pollution (due to the lack of a wastewater network and the overuse of pesticides, forcing people to buy desalinated drinking water or collect untrusted desalinated water from free filling points) represent major concerns in the area.

7.2 Electricity

In Gaza, electricity is often unavailable for 16 to 20 hours a day. Fuel shortages have led to a decline in the productivity of Gaza's power plant and greater dependence on Israeli supplies. More than two-thirds of Gaza's electricity, or around 120MW, come from Israel via power lines located in the ARA, between 10m and 20m from the fence. These power lines have been regularly damaged by both military operations and the enforcement of the ARA.1

In regards to agriculture, cultivating land in Gaza requires steady investment, particularly in its irrigation systems, as Gaza's hot summers and porous soil dictate frequent irrigation with clean water. Marred by chronic electricity blackouts of between 12-20 hours per day, the existing and outdated irrigation systems are often ineffective.

The agricultural sector depends on both irrigation water as a major production input and electricity to operate wells and ensure the flow of water in main and sub-pipelines. Yet, the occupied Palestinian territory—in particular in the Gaza Strip—faces severe water shortages due to Israel's control of its natural resources and the targeting of agricultural wells, in addition to other issues such as climate change, environmental degradation, frequent cycles of drought, and variations in the distribution of rainfall intensity.

Likewise, the ability to market and store agricultural products has also decreased due to the inability to operate refrigerators used to store food and raw materials. For instance, due to the ongoing power and water crisis, which escalated in August 2020 when Israel tightened its closure measures, the agricultural sector has suffered severe losses, mainly because farmers rely on electricity to irrigate their lands and cannot use alternatives, such as generators or batteries, because of their high cost.[8]

8-Coping strategies

Some ARA farmers who have other income opportunities stopped cultivating their land and preferred to rent it out or leave it without use. However, many farmers have no other choice but to continue living and working in their lands. Despite major challenges at farm, household, and community levels, farmers survive through applying a wide range of coping strategies in the ARA.

8.1.1 Changing cropping patterns for farmers

Restricted access to land and water are key challenges faced by farmers, fishers, and herders in the ARA at land and sea. Therefore, as the first coping strategy, the majority of ARA farmers have changed their cropping pattern: they shifted to non-irrigated annual crops that do not require intensive care and frequent presence in the farm. Even their irrigated crops follow low investment approaches, considering the high risk and the restriction on investments in ARA.

8.1.2 Sale of personal assets

For the rehabilitation of their lands, farmers depend on aid programs implemented by international and national NGOs. In many cases, when farmers do not receive such assistance, they are obliged to sell family assets to rebuild the farm assets. Farmers, fishers, and herders stated that they have had to sell the family assets including livestock to rehabilitate their productive assets and sometimes to cover the operational costs.

8.1.3 Relying on informal and input credit

Results revealed that farmers and fishers rely on informal credit to buy agricultural inputs needed for production as they do not have enough cash to cover production costs. Sometimes, farmers could not afford to pay back their debts because of crop failure and/or low market prices. It was reported by FGD participants that they had to sell their land properties to repay their agricultural debts. The same was reported by fishers, especially to maintain their boats.

9-Barriers to change

Most interventions to support vulnerable ARA communities follow emergency humanitarian modalities which are of temporary effect and leave the targeted farmers, fishers, and herders without longer-term, resilience-building solutions. To achieve sustainable change of the context within the ARA, both emergency and development programming are needed, through coherent and integrated approaches. Emergency interventions are needed to provide the urgent support to the affected population to reduce the acute effects of the ARA enforcement on their livelihoods while development or at least early recovery interventions are needed to support the sustainability of ARA livelihoods and their resilience against different types of shocks and challenges. To do this, understanding major barriers to change is essential, to identify entry points for potential interventions. The identified barriers presented here are based on the results of this study, reflecting analyses of both secondary and primary data, and taking into account the inputs of affected communities (farmers, fishers, and herders) as well as key experts and related institutions.

9.1 Prolonged ARA enforcement and “normalization”

The protracted ARA enforcement has developed a 'new normal' situation that is seen as an accepted state of fact, not only by the affected communities but also by duty-bearers. This has led to the development by the affected population of coping strategies to adapt to the negative impact of ARA-enforcement and to deal with its enforcement as a given fact that cannot be changed. The same is applied by national and international institutions, as a considerable number of NGOs avoid interventions in the ARA, since it involves high access constraints and the investment there is seen as very risky. Even NGOs who work there mostly consider only emergency interventions, or supporting affected people to sustain their production modalities, without providing any innovative approaches that challenge the ARA enforcement. UN agencies including OCHA and other international NGOs do not design/implement ARA specific programming as they believe that ARA should not be defined as a special zone when discussing protection, livelihood, economic issues. The same approach is followed by local municipalities, who fear investing in the ARA as frequent Israeli incursions may cause losses of infrastructure.

The results of this study indicate the special context of ARA and the severe negative impositions of ARA enforcement on the affected population. There is not only a need for Israel to provide a clear definition of the ARA, there is a need for international stakeholders to pressure Israel to remove the ARA as much as possible to allow Gaza to its full development and the full access to basic human rights by Palestinians under international law.
There is an urgent need to start thinking of innovative approaches that can provide better living conditions for the affected people in the ARA. Innovation does not mean only technology, but also to consider change in the institutional settings and policies that protect and support those affected people, as well as enhanced economic engagement in the market system to ensure sustainable improvement of the ARA-based and ARA-dependent livelihoods.

9.2 Lack of clear definition of ARA and lack of supporting policies

Throughout the study it appeared as obvious that there was no common definition of the ARA among stakeholders. This makes it difficult to design responsive actions to support the affected population in the area. There is a need to put pressure on the Israeli government to commit to the international agreements and provide a clear definition of the ARA and its enforcement procedures. This is essential to hold the Israeli government accountable for their actions inside the occupied Palestinian territory. Although this may be beyond the capacities of national institutions, it is very much a goal to be pursued by UN institutions and by the international community. This implies investing in advocacy programs targeting donors, international institutions and states. On the other hand, the national policies and strategies have limited visions on the potential developments that can be achieved in ARA. There is a need to conduct a review of national policies to enhance strategies that support ARA affected communities and diverse populations groups.

9.3 Geopolitical context

The impact of the geopolitical context is a major barrier that restricts any positive change in the ARA. It is subject to dramatic changes as a result of any escalation, not only in the ARA but in any other areas in the Gaza Strip. This threatens any efforts to invest in solving the problems faced by ARA communities. The geopolitical barrier is the most difficult one and would require significant efforts, not only to change the ARA enforcement itself, but also to encourage flexible innovative approaches, while planning intervention strategies which take into consideration the high risks in the ARA.

9.4 Weak capacities of institutions of duty bearers and support services

Interviews with municipalities in ARA revealed the weak capacities to provide the needed support to ARA communities. In Alshuka for example, the municipality is not able to respond to the needs of its community to open roads ensuring access to agricultural lands. In Beit Hanoun, the municipality lacks the resources to provide public services in the ARA. In general, support services and organizations working in the agricultural sector need to scale up their response to farming communities. For instance, the need to provide agricultural extension services responding to climate change and its severe impact on farming activities is significantly higher in ARA areas. Such services are needed to plan and implement climate adaptive extension programs to improve farm management towards an adequate production system. Additionally, the ARA communities including farmers, fishers, and herders need a wide range of support services including financial, business and market development services.

An integrated approach targeting the ARA communities would require working on building the capacities of support services institutions and improving their programming to match the specific needs of those communities. On the other hand, the ARA communities need to organize and interlink with support services to ensure sustainable access to the supplied services.

9.5 Market system is not supporting economic engagement of affected population

When looking at value chains of products that are processed by farmers, fishers, and herders, one observes that the market share of small-scale producers is limited. This is due to the market system structure, weak capacities of market actors and an unsupportive enabling environment. Responsive programming would require analyzing the value chains of the ARA products to identify the market opportunities that ensure increased participation of vulnerable groups, describe different types of barriers that limit capturing the identified market opportunities, and design tailored actions to overcome the identified barriers. Interventions to overcome the barriers are diverse and need to be tailored for each value chain. In general, it can be categorized under three main pillars: first, building the capacities of market actors, second, building the capacities of small-scale producers, and third, enhancing the enabling environment.

10-Opportunities and recommended interventions within the ARA

The study investigated the existing potentials and opportunities that can enhance the livelihoods of affected communities in ARA. The following opportunities and recommended interventions were identified based on the secondary and primary data collected during the study, reflecting the views of ARA communities, key experts and relevant institutions.

10.1 Develop integrated holistic strategy serving the ARA communities

All the implemented interventions in the ARA are of a scattered nature, where part of the diversified needs of the communities are covered in a temporary manner. This reflects the need to work with the ARA community and all duty bearers including governmental, non-governmental, national and international institutions to design an ARA response strategy that is based on the actual diversified needs to the ARA communities and considers an integrated holistic approach to ensure sustainable positive change. As described above, the ARA communities face a multidimensional vulnerability context where man-made crises and natural disasters affect their lives in several ways. At national level, there should be responsive strategies not only to support the affected ARA communities but also to invest the wasted natural resources that are restricted in the ARA. The impact of such a strategy should serve the national economy not only for those who live and work in ARA, but beyond. Major questions such as what are the possible uses of the ARA, how to adapt to different types of risks, and what is required to use these resources efficiently, should be tackled and addressed.

The development of such a strategy would require working with all stakeholders and developing a stakeholders mapping identifying roles and responsibilities of all actors.

10.2 Enhance protection and advocacy programming

The study indicated the efficiency of the human rights violations reporting system. PUI, alongside Human rights institutions and relevant technical ministries have good outreach to ARA communities and have developed an efficient reporting mechanism of all types of violations. The data collected through local committees and grassroots organizations are verified by human rights organizations. Data is available and regularly published in reports available online. Losses of farmers and fishers are also registered in MoA and shared with International NGOs that can then position themselves to provide support. Still, advocacy efforts to ensure that the voice of the ARA communities is internationally heard is limited. The ability to hold Israel accountable for its actions against ARA affected communities is also limited. Further efforts are needed to work on more visual public advocacy to explain the specificities of ARA communities and the impact of ARA enforcement not only on the livelihoods of affected people but also on the whole national economy.

10.3 Improve natural resources management

The lack of water resources is a major determinant of the success of farming activities and the economic return made for vulnerable families in ARA. The farmers are not capable of investing in infrastructure (construction of wells or carrier lines) to increase water availability to irrigate their lands. The current programming to use recovery schemes to treat wastewater in agriculture presents a good opportunity to enhance productivity and livelihood of farming families in ARA.

Land resources in the ARA area are most appropriate for agriculture as the level of fertility and limited agricultural practices increase the productivity of land. Supporting farmers who left their land unfarmed to bring it back to production will enhance income and contribute to increasing food production in Gaza strip.

Solar-powered agricultural well serving ARA lands, PV system installed by PUI in 2022.

10.4 Support eco friendly climate adaptive production systems

Open farming systems in ARA are the most climate vulnerable production systems. Therefore, there is a need to enhance the adaptive capacities of farming communities within the ARA. A wide range of interventions can be devised, including the accessibility of knowledge on optimal climate adaptive production systems and enhancement of climate change responsive farm management techniques. Farmers can also be supported through the provision of assets that can help them in adapting to the adverse impacts of climate change and environmental degradation. Low plastic tunnels are a common climate adaptive practice and can be installed in the ARA without any Israeli restrictions and can be one good example of climate adaptive farming assets. Additionally, there is a need to enhance farm capacities to store and utilize water efficiently through water storage and modern irrigation techniques.

A low investment production system has the advantage of low level of agrochemical use. Farmers in ARA reported that they go for BA'LI production system, which refers to Baladi seeds rain fed production of seasonal vegetables with limited or no use of agrochemicals. Vegetables such as okra, arch, peas and beans are popular in ARA areas. However, the added value of these products reflected in food safety is not distinguished in the local market. Usually, safe products are sold through specific market channels after being monitored and labeled.

The prices of labeled safe products can be 50% higher in the local market. The production monitoring and labeling of agricultural products is introduced in Gaza strip through a program funded by SIF and implemented by Al Azhar University. ARA crops have the potential to obtain this safe product label and enjoy the price premium. Working with ARA farmers to build their capacities on how to commit to safe production standards, supporting them to develop their farms to adapt to the safe farming practices and linking them to a safe farming labeling system will enable them to access the developed market system for safe products and enjoy this increased profitability.

10.5 Enhance economic engagement of vulnerable ARA farmers

The role of farming families in ARA is limited along the food production value chains, to the production of agricultural products. However, their ability to be further involved in practicing more diversified roles along the chains could improve their market engagement and thus provide more income. Post harvesting, processing and trading of agricultural products can stand as good opportunities for farmers and their families to increase the economic return from the economic activities.

Further analyses of agricultural value chains of the products produced in ARA is essential to define the potential role of farming families within ARA that have access to good market opportunities. Studies could also define the type of interventions to overcome structural barriers preventing improved economic engagement of farming families. Programming of market-based and market-for-poor approaches integrate a wide range of activities including improvement of knowledge and skills, facilitation of market linkages, building institutional capacities of value chain ecosystems and supporting services and policies. The design of integrated market system interventions can be thought based on thorough analyses of periodized value chains. The ARA vegetables value chain has a significant potential for increasing market share for vulnerable farmers.

10.6 Increase the capacities of fishers

Supporting fishers in obtaining the needed spare parts and maintenance material for their assets is essential to sustain their fishing activities. Israeli forces claim that the spare parts and maintenance material are of a dual use nature and therefore are banned. There are current efforts by MoA and UNOPS to import these items through the GRM system which ensures monitoring of the end user of the imported items. They have resulted in some progress recently, in November 2022 (see above). This may not however be the optimal solution for the increasing demand on spare parts and maintenance material for the fishing sector. The system is too slow in responding to the increasing needs. However, it can help solve stressing problems affecting the whole fishing sector. Fishers in FGDs stated that they would not be able to take their boats beyond 12 NM even if they were allowed to: the old boats and engines are not capable of fishing at such distance.

10.7 Scale up compensation mechanisms and institutions for farmers, fishers and herders

As described above, the losses of farmers, fishers and herders are documented and registered by national authorities and shared with international NGOs who have access to funding to support the affected cases. This approach is dependent on the availability of funds and supports only urgent cases with temporary aid that in most cases cannot help affected people to resume their production. Palestinian Agricultural Disaster Risk Reduction and Insurance Fund (PADRRIF) was established in 2013 to support farming communities to compensate for losses caused by different types of man-made and natural made crises. PADRRIF runs several programs to achieve this goal. However, limited funds and lack of capacities are major barriers to respond to the needs of the ARA. There is a need to work to improve the capacities of PADRRIF and design special programs for ARA affected groups.

10.8 Support cooperatives for fodder production for herders

Herders' main problem is the limited access to fodder for their animals. They are too poor to invest in renting land and cultivation of fodder crops. Hydroponic fodder production can help them to fodder for their animals while using only small surfaces of land. Hydroponic green fodder production can be applied to produce high quantities of fodder per unit of land and requires small amounts of water. The herders can be organized in producers' cooperatives and supported with the needed assets and capacity building to produce the required quantities of fodder. Such an approach was applied in the West Bank by UAWC, where farmer cooperatives were supported with the needed assets and capacity building in technical skills, as well as cooperative management schemes.

10.9 Enhance collective action and improve participation of ARA communities

One of the major issues related to the economic capacity of ARA communities is the small size of their production units. The diseconomy of scale limits their ability to invest in developing their production assets and to access better market opportunities. Collective actions and horizontal integration of ARA communities will not only strengthen their production enterprises (through collective buying of inputs, collective investment at community level, higher market power) but can also enhance their ability to reflect their needs and concerns through more influence to change existing policies.

11- Case studies

The impact of ARA on the farmers and fishers reflects the multidimensionality of their vulnerability. Two case studies are presented to show the impact of the ARA enforcement at land and sea.

11.1 Jehad El Dahdouh

farmer in ARA in Gaza governorate

Jehad El Dahdouh is 32 years old farmer owns 3 dunams in ARA area 600 meters from the perimeter fence in Gaza governorate. The 3 dunams are the only source of income for Jehad and his family, consisting of 3 members. The land was cultivated with olive trees before 2008. He used to earn good income from his trees but the whole farm was totally destroyed in the 2008 war. Now he prefers to go for seasonal vegetable crops, mainly potatoes, as it has less risk of being destroyed by the Israeli forces. Jehad stated:

" Trees need from 3 to 5 years to reach the productive phase. This needs big investment and involves high risk of losing all the invested time and efforts as a result of any escalation in the area. Therefore, I prefer to go for seasonal short time crops that involve less investment and lower risk".

Jehad used to purchase water from his neighbor but the water quantity was not sufficient to cover the needs of both farms. Therefore, he used all his savings to build a well with a small capacity to irrigate his land. The average production cost for the whole farm is ranging from 3,600 to 4,500 ILS per season, while the revenues are between 9,000 to 13,000 ILS per season. Potatoes can be cultivated for two seasons a year. The annual income varies according to the prices of products and the losses resulting from Israeli forces -related incidents in the area. On average, Jehad is making 700-900 ILS monthly income, which is hardly enough to cover the essential needs for his family.

As all ARA farmers, Jehad is exposed to various types of risks affecting his personal safety and the economic return of his farm. Several times he was exposed to Israeli forces shooting to force him to leave his farm. He lost the whole production two times. The first time was in 2014 when the Israeli forces tanks destroyed all plants just before the harvesting season while the second time was in 2021, when he was not able to reach the farm to irrigate the crops, resulting in the death of all his plants. In both cases he had to pay all the running costs while no revenues were made. The losses were registered in MoA but he received no compensation. He had to go for informal loans and input credits to rehabilitate his farm and restart production again. Jehad stated: "cultivation in ARA is different compared to the cultivation in any other area within Gaza strip. In addition to the risk of being exposed to direct shooting by the Israeli forces, farm assets and the plants are under continuous risk of being lost. I have to change my irrigation system every year as it is regularly exposed to the shooting by Israeli forces''.

Jehad is looking eager to have better opportunities to use his land with higher value cropping systems, with less risks. He believes that cultivation of perennial crops can generate higher income for his family but he is not sure if this is feasible in his case. As all ARA farmers, he wishes to be protected against Israeli forces targeting, and compensated for his losses. He also wishes to receive inputs subsidy to reduce the high production costs and the risks associated with ARA farming activities.

Jehad has also complained of the general problems faced by farmers in the agricultural sector, including the significant increase in plant diseases, high cost and low quality of agricultural inputs and the low market prices for the agricultural products.

11.2 Muhsin Abu Ryiallah
fisherman in the ARA in Gaza governorate

Muhsin Abu Ryiallah is a 50 years old fisherman, who was born and raised in a fishers' family. He is part of an extended family counting 65 members including the father, brothers, sons and grandsons. All males of the extended family are working in fishing activities. The extended family owned 1 boat and 8 small boats. Fishing activities are the only source of income for the whole family. The family lost a significant part of their fishing assets over the past five years. Their boat was taken by the Israeli Forces in 2016 and brought back after two years with major damages. The family spent more than 7,000 US $ to rehabilitate the boat. They did not receive any compensation and had to obtain informal loans to cover the rehabilitation costs. Over the last 6 years, three out of five small boats were also lost and damaged by the Israeli forces, with a total loss of 20,000 USD. The family is not able to rehabilitate the boats, as they don't have the needed money. This has decreased their capacities for fishing and affected the income for the whole household.

The ARA enforcement affects the family life in different ways, including the high-risk exposure that threatens the safety of the family members and the losses in fishing assets. Limited fishing areas cause significant decrease in the amount of fish catchment. Daily production does not exceed 50 kg of fish, which is too low to cover the high operation costs, as compared to the average quantity of 200 to 300 kg that can be caught when they are allowed to go up to 20 nautical miles. Muhsin stated that ARA enforcement is not the only challenge he faces, as he says

"even if Israel would allow us to go for deeper fishing area, we are not able to do so. All our equipment and engines are old and need maintenance. Israel banned the importation of engines and spare parts.
This increased the cost of maintenance of boats. Our boats can't go to the deep fishing area even if the Israeli forces allowed us. "

The estimated family income does not exceed 200 ILS per month, which is not enough to cover even food expenditures. The family depends on the food subsidy provided by UNRWA and other food aid programs, and cash assistance provided by the Ministry of Social Affairs. The shortage in income affects all aspects of life and increases tensions within the family. It also affects the family ability to invest in sustaining their fishing assets. Muhsin and his family rely on credit from relatives to cover the fishing fixed and operational costs. Due to the limited fish catchment capacities, the family is not able to repay the loans. According to Muhsin, the most urgent need for fishermen is the rehabilitation of fishing assets and the coordination to import the needed engines and boat spare parts. The fishermen need also to access Islamic formal loans to cover the rehabilitation costs.

Annex 1

List of interviewed key informants:

No.	Organization/Entity	Type	Contact Person
1	Ministry of Agriculture (MoA)	Local ministry	Wael Thabet Jehad Salah
2	Ministry of Agriculture (MoA)	Local ministry	Ferial Taha Khalid Jaber
3	Food Security Sector (FSS)	Humanitarian coordination body	Anas Musallam
4	UN Office for the Coordination of	Humanitarian coordination body	Hamada Al Bayari Ala'a Abu Ramadan
5	Food and Agriculture Organization (FAO)	UN Agency	Stefania DiGiuseppe
6	The Association of International Development Agencies \ (AIDA)	Coordination Body/INGO	Moner Murtaja
7	Gaza Protection Consortium (GPC)	INGO	Kirsty Ryan
8	Palestinian Non Governmental Organizations Network	National NGO	Nuha El Shareef coordinator of Agricultural sector
9	The Agricultural Development Association (PARC)	National NGO	Taysir Muhaisen Hani Al Ramlawi
	Union of Agricultural Work Committees (UAWC)	National NGO	Mohammed Bakri Basheer Ankah
11	Maan Development Center	National NGO	Mussab Al Hindi
12	Gaza Urban Agriculture Platform (GUPAP)	Local NGO	Ahmed Al Sourani
13	Al Mezan Center for Human Rights	Human Rights organization	Yamen Al Madhoun Sari Aqel
14	Palestinian Center for Human Rights (PCHR)	Human Rights organization	Hamdi Shaqoura Fadel Al Muzaini
15	Johr Ad Dik Municipality	ARA Municipality	Public Relations
16	As Shouka Municipality	ARA Municipality	Public Relations
17	Beit Hanoun Municipality	ARA Municipality	Public Relations
18	Bait Al Mustqbal Society	Local CBO in the ARA	Sabah Al Qarra Ahmed Abu Rjela
19	N/a	Key Community Leader	Fathi Abu Tair
	Fishers' syndicate	Representative body	Nizar Ayash
	UAWC's local fishers and farmers committees	Representative body	Raed Muhsen Housam Abu Abdo

Annex 2

KII Tool:

First: Interviews with ministries and municipalities in the ARA

1-What is the ARA definition in your area (How deep is the ARA and what are the Israeli procedures to impose this depth?)
2-What is your role in this area and what are the services you provide?
3-What are the main challenges facing municipalities that hinder the provision of services in the area?
4-What is the type of support required from municipalities to develop the services in the area
5-Is there any mechanism to ensure the community participation from the population in these areas related to municipalities and public services providers?
6-What are the gaps in services that the population suffer from in the area? (Water, electricity, education, health, other social services)
7-What are the most important policies concerning ARA and what are the gaps related to policies and institutions?
8-Any recommendations on the nature of interventions and whether there are studies for specific projects?

Second: interviews with NGOs (national and international)

1-What is the ARA definition? And what are your procedures in dealing with ARA?
2-Are there any studies related to ARA, its access and impact on the population (needs assessment or situation analyses)? And can these studies be shared?

3-What are the challenges the population face in the area? (economic, protection, public services, social services, community participation, water and sanitation)
4-Who are the most vulnerable groups in the ARA and how are they affected? (Women, PwD, youth, and children)
5-What are the main obstacles hindering your organization in planning and implementing interventions in the ARA (funds, occupation, or other obstacles)
6-What is the nature of your interventions in the ARA (can you provide us with a list of the implemented projects and programs, the allocated fund, the project duration, and the donor?)
7-What are the needed interventions to alleviate the impact on the local population in the ARA?
8-Any additional recommendations?

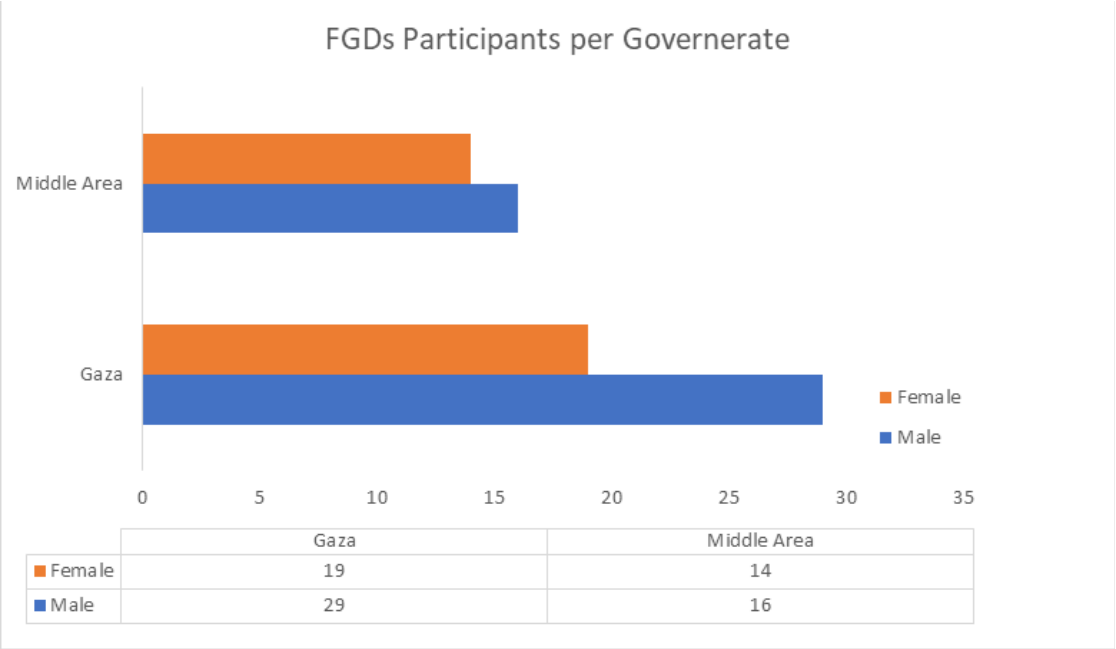
Third: Human Rights organizations

1-What is the ARA definition? And what are your procedures in dealing with ARA?
2-What monitoring mechanisms does your organization apply to document the Israeli attacks and human rights' violations in the area?
3-Do you have any mechanisms or programs for advocacy?
4-Do you have a database or related studies? Can you share them?
5-What are the most important human rights violations in the ARA? Explain these violations and the coping strategies adopted by the local populations?
6-What are the challenges the population face in the area? (Economic, protection, public services, social services, community participation, water and sanitation)
7-Who are the most vulnerable groups in the ARA and how are they affected? (Women, PwD, youth, and children)
8-What are the main obstacles hindering your organization documenting and publishing the Israeli violations and providing the protection and support needed for the affected populations?
9-What is the required support to ensure providing protection, advocacy, and documentation services in the ARA?
10-Publishing and documenting the national and international advocacy
11-Any additional recommendations?

Fourth: Humanitarian coordination bodies

1-What is the ARA definition? And what is your role in the ARA?
2-Are there any studies related to ARA and its impact on the population (needs assessment or situation analyses)? And can these studies be shared?
3-What are the challenges the population face in the area? (economic, protection, public services, social services, community participation, water and sanitation)
4-Who are the most vulnerable groups in the ARA and how are they affected? (Women, PwD, youth, and children)
5-What are the main obstacles hindering your organization in planning and implementing interventions in the ARA (funds, occupation, or other obstacles)
6-What is the nature of your interventions in the ARA (can you provide us with a list of implemented projects and programs, the allocated fund, the project duration, and the donor?)
7-What are the needed interventions to alleviate the impact on the local population in the ARA?
8-Any additional recommendations?

Annex 3



	Gaza	Middle Area
Female	19	14
Male	29	16

Annex 4

FGDs guiding questions:

- Name:
- Age:
- Family Size:
- Occupation:
- Describing the study and its purpose
- The Definition of the ARA.
- The impact on:
    - 1.The economic performance, the nature of economic activities, and the extent of its impact

  2.Protection

  3.Public services

  4.Social services

  5.The provision of natural resources

  Affected by climate change
- Risks the population are facing in the ARA.
- Coping mechanisms (positive and negative).
- The nature of support and projects to help the population and its advantages and disadvantages
- The nature of required support whether projects, permanent interventions or for protection purposes.
- Any other recommendations.

Annex 5

List of References:

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