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Food Security Challenges and Innovation: The Case of Gaza

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1. Introduction

Food security as conventionally defined and widely accepted is from the 1996 World Food Summit, “Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”.¹ Over the years food security discourse has shifted from food availability to food access and the global, regional and local policies needed to facilitate access.² The controversial element of the way food security is defined and applied is that emphasis is placed on the ability of individuals and households to purchase food on the market rather than the ability to access resources of production.³ This distinction has placed food security at odds with a food sovereignty framework.

Food security and food sovereignty are also interlinked with the Right to Food, which is protected and recognized under the human rights treaties.⁴ While commonly understood as an individual human right, the right to food includes an acknowledgement of how food is accessed and the rights of oppressed communities for legal recourse against policies that negatively impact their food security.⁵ This is in reference to communities, like Gaza, in which food insecurity has been used as a means of controlling the population. It is our position that any framework for food security in situations of protracted crises must include an understanding for situations in which food insecurity is used as a weapon and in where the Right to Food has been violated.

The purpose of this paper is thus to analyze the use of food insecurity as coercive tool or a weapon during conflict, providing a case study on Gaza. We will prove that Food insecurity in Gaza is not merely a product of conflict, but rather a systematic policy of control.

The following section will provide a geographical, historical and political context that the Gazan population is confronted with. It will shed light on the most recent events, including the Siege of 2007 and Operation Cast Lead in 2008-2009 and their impact on socio-economic indicators.

The third section on Food Security and Food Sovereignty in Gaza will outline the elements that are missing from the current food security definition and how they may be included. It will examine how the determinants of food security are used as a weapon of submission against populations, through dictating the access and use of natural resources, production and trade, and finally the exacerbation of aid dependency.

¹ FAO Policy Brief. June 2006. *Food Security*, Issue 2, 1

² Michael Windfuhr and Jennie Jonsen. *Food Sovereignty: Towards democracy in localized food systems*. (ITDG Publishing, 2005), 21.

³ *Ibid*, 22.

⁴ See article 25 of the Universal Declaration of Human Rights (UDHR)

⁵ Michael Windfuhr and Jennie Jonsen (2005), *op cit*, 19.

The fourth section will explore community-based innovations that were created in the extremely intricate case of Gaza, in order to retain certain economic and political agency over food and farming systems. This section provides a chance to learn from local initiatives, rather than potentially counterproductive external models. The fifth and the final section will wrap up the main arguments of this paper, linking them with suggestions on how to move forward.

2. Background

a. Geography and Population

The Gaza Strip lies on the southern part of the eastern coast of the Mediterranean Sea with a coastline of 40 km. It borders Israel to the north and east, 51 km long, and Egypt to the South, 11 km long⁶ with an area of approximately 362.7 square km. Gaza City and Port, approximately 32 km north of the Egyptian border, has given its name to the Gaza Strip.⁷

In 1948 and after the creation of the State of Israel on the majority of Mandatory Palestine, about 711,000 Palestinians were expelled from territories that became Israel. Around 200,000 immigrated in to Gaza tripling the total population to around 300,000⁸. Coupled with an increase of 3-4 % each year, the population reached a total of 1,486,816 in 2009⁹ of which 73.3 % are registered as refugees.¹⁰ Around half of the refugee population lives in 8 official refugee camps, aided by the United Nations Relief and Works Agency for Palestinian Refugees (UNRWA).¹¹

This massive population increase made Gaza one of the most densely populated areas in the world reaching 4073/km² in 2009.¹² Four out of five persons live in urban areas of the Gaza Strip and half of the population is concentrated around Gaza City with a density that reached 16,500/sq km in 2005.¹³

The Palestinian population in the West Bank and Gaza Strip is a young population. 44.9% of the total population in Gaza is under the age of 15 years¹⁴.

⁶ CIA World Fact Book. *Gaza Factsheet*. Accessed July 25th 2012 at

<https://www.cia.gov/library/publications/the-world-factbook/geos/gz.html>

⁷ The Applied Research Institute- Jerusalem (ARIJ). *An Analysis on the Recent Geopolitical Situation in the Gaza Strip* (2003). Accessed July 25th 2012 at

http://www.arij.org/index.php?option=com_content&view=article&id=287&Itemid=62

⁸ Heiberg, M & Øvensen G et al, *Palestinian Society in Gaza, West Bank and Arab Jerusalem: A Survey of Living Conditions* (Oslo: Fafo, 1993)

⁹ Palestinian Central Bureau of Statistics (PCBS), *Palestine in Figures: 2009*, 11, Ramallah:

Palestinian National Authority (PNA) (May 2010), Accessed July 26th 2012 at

http://www.pcbs.gov.ps/Portals/_PCBS/Downloads/book1661.pdf

¹⁰ UNRWA. *UNRWA in Figures*. Gaza: Public Information Office, (2009), Accessed July 26th 2012

at <http://www.unrwa.org/userfiles/uif-june09.pdf>

¹¹ Ibid

¹² PCBS (May 2010), op. cit., 9

¹³ Demographia, *Demographia World Urban Areas*, 8th Annual Edition: Version 2 (July 2012),.

Accessed July 27th 2012 at: <http://www.demographia.com/db-worldua.pdf>

¹⁴ PCBS (May 2010), op. cit., 9

b. The Political Framework

After the end of the British Mandate in 1948, Gaza remained under Egyptian rule until it was occupied by Israel in 1967 along with the West Bank and the Jolan Heights in Syria. The Israel Military Apparatus dictated Gaza's entire socio-economic life, including trade, aid, land and water accessibility. It expanded its control across the years through the gradual growth of 26 settlements hosting around 6500 settlers.¹⁵

Following the 1993 Israel-PLO Oslo Accords, also known as the Declaration of Principles on Interim Self-Government Arrangements, a certain level of civilian responsibility was promised to the Palestinian Authority (PA). The declaration stated that: "in order that the Palestinian people in the West Bank and Gaza Strip may govern themselves according to democratic principles, direct, free and general political elections will be held for the Council" under international and national observation¹⁶.

In early 2006, the Islamic Resistance Movement, Hamas, won control of the Palestinian Legislative Council (PLC) triggering the 2006-2007 economic sanctions against the Palestinian National Authority by Israel and the Quartet. Soon after, clashes erupted between Fatah and Hamas supporters, and ended up in a Hamas-led government in Gaza and Fatah-led government in the West Bank.

In 2007, The Israeli occupation's imposed restrictions on land, air and sea, transformed into an unprecedented blockade that is stricter than any of the 11 sanctions currently enforced by the UN Security Council on nation states¹⁷. Locking 1.5 million people in one of the world's most densely populated areas, has according to the UNDP (2009), triggered a "protracted human dignity crisis". The erosion of livelihoods and the gradual decline in infrastructure resulted in an ongoing degradation in the living conditions of the population".¹⁸

The blockade restricts exports and imports, including food and agricultural inputs, people's border crossing, and access to land and

15 Arij (2003), op. cit., 4,6

16 *Declaration of Principles on Interim Self-Government Arrangements ("Oslo Agreement")*, 13 September 1993, Accessed July 28th, 2012 at: <http://www.unhcr.org/refworld/docid/3de5e96e4.html>.

17 World Health Organization (WHO). *Report of the Specialized Health Mission to the Gaza Strip* (May 2009), in Rami Zurayk and Anne Gough, *Control Food Control People: The Struggle for Food Security in Gaza*, Institute for Palestine Studies, in Press, 3

18 UN OCHA, *Locked in: The Humanitarian Impact of two Years of Blockade on the Gaza Strip* (August 2009) Accessed July 20th 2012 at: http://www.ochaopt.org/documents/Ocha_opt_Gaza_impact_of_two_years_of_blockade_August_2009_english.pdf

fishing waters¹⁹. It also imposes frequent cuts in the provision of fuel and electricity²⁰. Further more, the systemic policy of land confiscation through settlement expansion was replaced with the enforcement of vast access-restricted areas.²¹

c. Operation Cast Lead

In late 2008 and early 2009, Israel launched the 22-day Operation Cast Lead on Gaza that was considered as “one of the most violent episodes in the recent history of the occupied Palestinian territory”.²² The war resulted in enormous human and economic losses. According to WHO (2009) “1,700 households lost their breadwinner from death or injury, and over 15,000 homes were totally or partially destroyed.”²³ The Report of the United Nations Fact Finding Mission on the Gaza Conflict found that there was a “deliberate and systemic policy” to target industrial infrastructure, food production facilities and water installations.²⁴ Almost all of Gaza’s 10,000 smallholder farms have been partially or completely damaged²⁵, around half a million trees were destroyed²⁶, and a “minimum of 35,750 cattle, sheep and goats, and more than one million birds and chickens were killed.”²⁷, much of which was also seen as a “deliberate act of wanton destruction” by the UN Fact Finding Mission on the Gaza Conflict.²⁸

Only a minority of the recovery projects by the international community have been granted approval by the Israeli authorities.²⁹ This, coupled with the blockade that restricts the movement of people, and only permits the access of goods that the Government of Israel judges to be unconditionally humanitarian, left 75% of the infrastructure unrecovered over a year and half after the war has ended.³⁰

19 UN Office for the Coordination of Humanitarian Affairs (OCHA), *Humanitarian Situation in the Gaza Strip* (October 2011) Accessed July 28th 2012 at:

http://www.ochaopt.org/documents/ocha_opt_Gaza_factSheet_October_2011_english.pdf

20 WHO (May 2009), op. cit, 13

21 Rami Zurayk and Anne Gough (In press), op. cit., 4

22 UNDP, *Gaza Early Recovery and Reconstruction Needs Assessment: One Year After Report* (May 2010), 9

23 WHO (May 2009), op. cit., 5

24 UN Human Rights Council, *Report of the United Nations Fact-Finding Mission on the Gaza Conflict*, 25 September 2009, A/HRC/12/48, 22, available at:

<http://www.unhcr.org/refworld/docid/4ac1dd252.html> . Accessed 28th July 2012

25 FAO, *The Humanitarian Situation in Gaza and FAO's Response*, Emergency Operations and Rehabilitation Division(2009),, at

http://www.fao.org/fileadmin/templates/tc/tce/pdf/FAO_brief_on_Gaza_23_Jan_09.pdf

26 AlHaq, *Operation Cast Lead: A Statistical Analysis* (August 2009) Accessed 25th July 2012 at http://www.icawc.net/fonds/Gaza-operation-Cast-Lead_statistical-analysis%20by%20Al%20Haq_August%202009.pdf

27 UNEP *Environmental Assessment of the Gaza Strip: following the escalation of hostilities in December 2008–January 2009* (September 2009), Accessed July 24th 2012 at:

http://postconflict.unep.ch/publications/UNEP_Gaza_EA.pdf

28 UNHRC (September 2009) op. cit, 21

29 UN OCHA (October 2011), op. cit, 1

30 UNDP (May 2010), op . cit, 7

Having suffered several decades of conflict, occupation and recently the blockade, the civilian population of Gaza has witnessed an ongoing deterioration in the living standards. Despite the marginal easing of the blockade in 2010,³¹ broad unemployment stands at 45.2%, including over half of Gaza's youth³². The GDP per capita was almost 17% below its equivalent figure in 2005 and ³³ the average real monthly wage, has dropped with a cumulative decline of 34.5 percent since 2006³⁴. Poverty remains high at a rate of 38.8%, including 21.1% of the population suffering from deep poverty. ³⁵ The erosion of livelihoods has deepened the reliance on external assistance with 80% of the population receiving aid. ³⁶

3. Food Security and Food Sovereignty: Gaza

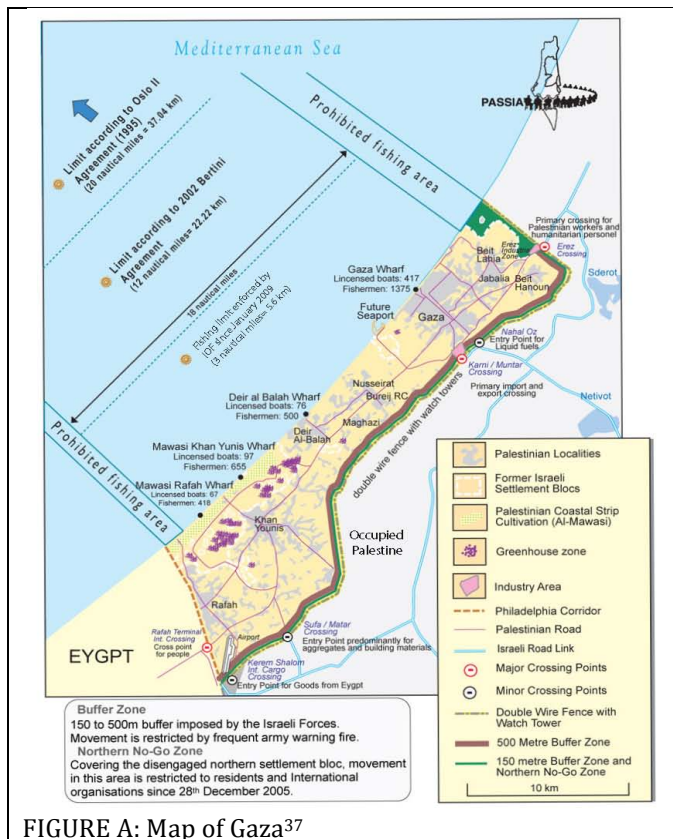


FIGURE A: Map of Gaza³⁷

Food insecurity is an entitlement failure.³⁸ Entitlements are a “bundle” of interconnected determinates, predominately political and economic rights, that define a community’s ability to access food.³⁹ Persistent levels of hunger, high rates of food aid, damaged agricultural economies and, frequently asymmetric trade imbalances with wealthier powers characterize areas of chronic food insecurity. Food insecurity can be created in an area and used as a tool of control against populations. In this section we examine how the determinants of food security are used as a weapon. We apply the

³¹ “In 2011 less than one truckload of goods per day exited Gaza, less than 3% the average amount of exports during the first half of 2007.” UNOCHA, *Five Years of Blockade: the Humanitarian Situation in the Gaza Strip* (June 2012). Accessed at July 20th 2012 at: http://www.ochaopt.org/documents/ocha_opt_gaza_blockade_factsheet_june_2012_english.pdf

³² UNRWA, *Labour Market Briefing: Gaza Strip- Second Half of 2010* (April, 2011), 1-2. Accessed on July 20th 2012 at <http://www.unrwa.org/userfiles/201106083557.pdf>

³³ Ibid

³⁴ By the end of 2010 Average Monthly wage stood at 1380 ILS (USD 372.2) and Average Real wage at 1,042 NIS (261.230 \$). UNRWA (April, 2011), 1-2

³⁵ PCBS, *On the Eve of the International Population Day*, (July 2012) Accessed on July 20th 2012 at : http://www.pcbs.gov.ps/Portals/_pcbs/PressRelease/PeopleDay_2010E.pdf

³⁶ UNOCHA (June 2012), op. cit, 1

³⁷ From Palestinian Academic Society for the Study of International Affairs (PASSIA). “The Gaza

determinants to the food and farming systems in Gaza as a case study.

Food insecurity levels in Gaza have decreased since their historic highs after the massive Israeli attack in 2009. However, the WFP and FAO have found that most households defined as food insecure, around 50%, in Gaza suffer from chronic food insecurity.⁴⁰ This is a sign of a long-term food crises and a depletion of coping mechanisms and resilience.⁴¹

The primary reason for chronic food insecurity in Gaza is the protracted Israeli occupation of Palestinian land, resources and economy. Some academics have observed that Gaza is a “laboratory” for the Israeli military, in which they test strategies of control like siege and access restricted zones.⁴² In 2006 Dov Weisglass, an advisor to former Israeli prime minister Ehud Olmert (2006) stated “The idea is to put the Palestinians on a diet, but not to make them die of hunger”.⁴³ He was describing the Israeli imposed siege on Gaza. Artless admissions of the use of food as means to control a population are rare. However, it is a useful remark in understanding how and why people in Gaza are living with high rates of food insecurity.

a. Defining Food Security

Food security exists when all people with full agency and freedom from fear of not having enough to eat, have, at all times, physical and economic access to healthy farming systems and means of land reform. All people are entitled to sufficient, safe, and nutritious food made possible through the support of agrarian livelihoods. All people are able to meet their dietary needs and preferences for an active and healthy food culture. All people should be able to meet these determinants through mechanisms of democratic deliberation.”⁴⁴

This recast definition of food security is based on the components found to be missing from the conventional definition: access to resource entitlements, agrarian livelihoods, community agency, and a local food culture. For this section we highlight access to entitlements, agrarian livelihoods and community agency.

Strip, Year 2007”. <http://www.passia.org/>. With author adaptations based on data from Physicians for Human Rights Israel, *Humanitarian Minimum: Israel’s Role in Creating Food and Water Insecurity in the Gaza Strip* (December 2010), 63.

³⁸ Raj Patel and Philip McMichael, “A Political Economy of the Food Riot” *Monthly Review* 32 (2009), 13

³⁹ Amartya Sen, *Poverty and Famines: An Essay on Entitlements and Deprivation* (Oxford: Clarendon Press, 1981).

⁴⁰ FAO and WFP, *2010 Socio-Economic and Food Security Survey: West Bank and Gaza Strip* (2011), 8.

⁴¹ Ibid

⁴² Darryl Li, “The Gaza Strip as Laboratory: Notes in the Wake of Disengagement” *Journal of Palestine Studies* XXXV (2), (2006) 46.

⁴³ Conal Urquhart, “Gaza on brink of implosion as aid cut-off starts to bite” *The Guardian* (15 April 2006). Accessed 3 September 2011 at <http://www.guardian.co.uk/world/2006/apr/16/israel>.

⁴⁴ Rami Zurayk and Anne Gough. *Control Food Control People: The Struggle for Food Security in Gaza*” Institute for Palestine Studies, in press.

This approach links people to the food they consume, accounts for the political framework in which food security actions are deployed, and changes the notion of food from a “commodity” to an “entitlement.”

Food security in this definition is based on food sovereignty. Food sovereignty is a “precondition”⁴⁵ of food security and is essentially the right to make decisions about development based on the needs of people and the specific context of their farming systems. Amartya Sen (1981) created the foundation for the critical study of food security in his research on entitlements, in which he highlighted instances of hunger and chronic food insecurity in areas where plentiful food was available on local and international markets.⁴⁶ We draw on the work Simon Maxwell (1988) who added “freedom from the fear that there will not be enough to eat”⁴⁷ to the discourse on food security. Furthermore the theories of the global food regime⁴⁸ and depeasantization⁴⁹ informed the segments of the definition pertaining to community agency and agrarian livelihoods.

b. Access to Resources

Access determines the ability of a community to access entitlements like political and economic rights as well as ecological entitlements like land and water. The struggle for equitable access to entitlements is a struggle against exclusion for full rights of citizenship.

In Gaza, water entitlements have either been usurped by the Israeli occupation or destroyed in land and air attacks. Israeli use of water for agriculture and domestic consumption far outnumbers total Palestinian usage.⁵⁰ Ninety percent of the coastal aquifer under Gaza is polluted with sewage leaking from networks and buildings bombed by Israeli airstrikes.⁵¹ To compound the situation, Israeli occupation officials have blocked the necessary equipment to repair the

⁴⁵ Via Campesina. November 11-17, 1996. *Food Sovereignty: A Future without Hunger*

⁴⁶ Amartya Sen, 1981, *op.cit.*

⁴⁷ Simon Maxwell, “National food security planning: first thoughts from Sudan”, paper presented to the workshop on food security in the Sudan (University of Sussex, Brighton: IDS, 1988).

⁴⁸ “The ‘food regime’ concept historicized the global food system: problematising linear representations of agricultural modernisation, underlining the pivotal role of food in global political-economy, and conceptualizing key historical contradictions in particular food regimes that produce crisis, transformation and transition. In this sense, food regime analysis brings a structured perspective to the understanding of agriculture and food’s role in capital accumulation across time and space. In specifying patterns of circulation of food in the world economy it underlines the agrofood dimension of geo-politics. In Philip McMichael, “A food regime genealogy” *Journal of Peasant Studies*, (2009) 36:1,139 — 169

⁴⁹ Depeasantization denotes a process that accounts for the further marginalization of agrarians. The concept was developed in order to describe the mass exodus of small farmers from agricultural lands to cities in the 1980s as a direct result of structural adjustment programs (SAPs) imposed on poor countries by the Washington Consensus. Deborah Bryceson “Disappearing Peasantries? Rural Labor Redundancy in the Neo-Liberal Era and Beyond,” in Bryceson, Cristobal Kay, and Jos Mooij, eds., *Disappearing Peasantries? Rural Labor in Africa, Asia, and Latin America* (London: Intermediate Technology Publications, 2000), 304-05.

⁵⁰ Mark Zeitoun et al, “Asymmetric Abstraction and Allocation: The Israeli-Palestinian Water Pumping Record” (2009) *Ground Water* 47 (1), 155

⁵¹ Amnesty International, *Thirsting for Justice* (October 2009), 11

irrigation, plumbing and sewage networks that they destroyed in 2009. Aid flows for water infrastructure have also dried up. In 1994, 5 million dollars was disbursed for water projects, and in 2006 the figure was 1.9 million.⁵² Access to water in Gaza is now based on income, not on entitlement, as households that are able to afford so purchase potable water from private filtration companies.⁵³ Those households that cannot afford such purchases consume less water; some surviving on as little as 20 liters/day/person,⁵⁴ while water consumption for the average Israeli is about 300 liters/day/person.⁵⁵

c. Agrarian Livelihoods

Smallholder farmers and are disproportionately more likely to be afflicted by poverty and food insecurity. 75% of the world's poorest people live in rural areas and depend at least partially on agriculture for their livelihoods.⁵⁶ As a result of the global emphasis on commodity agriculture and unequal access to entitlements, half of the world's hungry are smallholder farmers and 22% are landless families. Supporting agrarian livelihoods is therefore crucial to economic, human, and environmental security.

Gaza is an extreme example of marginalized agrarian livelihoods. The occupation of land has drastically curtailed the ability of Gaza farmers to make a living. While the Israeli settlements were in place they occupied 20% of the land, with bypass roads and other areas closed to Palestinians accounting for a further 15%⁵⁷. After the removal of settlements in 2005, the Israelis expanded access restricted zones by scraping away the topsoil around Gaza's land border,⁵⁸ these zones now occupy 29% of Gaza's arable land.⁵⁹

Around 112,000 olive trees are estimated to have been uprooted and destroyed by the Israeli military in Gaza between 2000-2008.⁶⁰ Many of Gaza's citrus orchards were destroyed around the same time.⁶¹ Olives and citrus are valuable sources of revenue generation for Palestinian farmers. They provide a number of uses for households, from soup and oil to preserves. They are also an integral part of Palestinian food culture.

⁵² Sahar Taghdisi-Rad, *The Political Economy of Aid in Palestine: Relief from Conflict or Development Delayed?* (London: Routledge, 2011).

⁵³ Amnesty International (2009), *op.cit*

⁵⁴ ANERA, *Agriculture in the West Bank and Gaza* (February 2011), 3.

⁵⁵ *Ibid*

⁵⁶ Michael Windfuhr and Jennie Jonsen. *Food Sovereignty: Towards democracy in localized food systems*. (ITDG Publishing, 2005), 3.

⁵⁷ Linda Butler (Compiler), "Gaza Fact Sheet" *Journal of Palestine Studies* 38 (2009), 96.

⁵⁸ Darryl Li, "The Gaza Strip as Laboratory: Notes in the Wake of Disengagement" *Journal of Palestine Studies* XXXV (2), (2006) 46.

⁵⁹ ANERA (2011), *op cit*.

⁶⁰ Eva Bartlett. 8 January 2012. "The Olive Branch Fights Back" *Inter Press Service* (IPS). <http://ipsnews.net/news.asp?idnews=106384>

⁶¹ Saud Abu Ramadan, "Gaza's national income shrinks as citrus are gone" *Xinhuanet*. http://news.xinhuanet.com/english2010/world/2010-10/28/c_13578742.htm



Agriculture used to function as an economic safety net for employment in Gaza. This is no longer the case as access restricted zones in combination with regular Israeli incursions have led to an increase in malnutrition,⁶³ food insecurity⁶⁴ and 70% of farmers in Gaza living below the poverty line⁶⁵. Farmers and fisherfolk are also the frequent targets of Israeli violence. In the last nine years the Israeli army has killed between 10-15 farmers every year in the access restricted zones.⁶⁶ For the past several years Gaza fisherfolk have been restricted to 3 nautical miles.⁶⁷ When they cross this

limitation, and frequently before, fisherfolk are routinely pounded by water cannons and even live fire. Including families and merchants, the fishing industry once supported 60,000 people, now 90% of the 4,000 fisherfolk in Gaza are unemployed.⁶⁸

d. Community Agency

Community agency prioritizes the right of people that are commonly excluded from decision making to determine their food and farming systems. This is related to the struggle against moneyed interests with political power for the recognition of the right to have rights.⁶⁹

⁶² Map. Google. 2012. *Google Earth* Vers. 6.1.0.5001. Image Date: 4 September 2011.

⁶³ After the access-restricted areas were delineated in North Gaza, rates of anemia increased and stunting levels in the population reached 29%. Email interview with Najwa Rizkallah, Nutrition Specialist UNICEF oPT (September, 2011) In Rami Zurayk and Anne Gough (in press), *op. cit.*

⁶⁴ FAO / WFP (2011), *op. cit.*, 12.

⁶⁵ ANERA (2011), *op. cit.* According to ANERA, the poverty rate in the access-restricted zones is much higher than in other sections of Gaza, which they list as 42%. The WHO claims that Gaza's actual poverty rate, without aid, is closer to 80%. WHO (May 2009), 29.

⁶⁶ United Nations, *Report of the UN Fact Finding Mission on the Gaza Conflict* (September 2009), p. 275.

⁶⁷ Harriet Sherwood, "Gaza fishermen swamped by Israeli gunboats and water cannon" *Guardian* (24 July 2011). Accessed 1 August 2011 at <http://www.guardian.co.uk/world/2011/jul/24/gaza-fishermen-gunboats-israel-navy>

⁶⁸ Eva Bartlett, "Gaza's fishing industry under fire" *Electronic Intifada* (13 June 2011). Accessed 1 August 2011 at <http://www.guardian.co.uk/world/2011/jul/24/gaza-fishermen-gunboats-israel-navy>

⁶⁹ Patel paraphrases Hannah Arendt. Raj Patel, "What does Food Sovereignty Look Like?" *Journal of Peasant Studies* 36 (July 2009).

The erosion of Palestinian agency is evident in aid dependency,⁷⁰ the emphasis commodity agricultural production and the international shift in funding infrastructure to funding projects that prioritize integrating Palestinian business with the Israeli economy.⁷¹ The current Palestinian Reform and Development Plan is supported by the Quartet and the World Bank and mimics structural adjustment policies by devaluing agricultural investment.⁷² This puts an unsupported Palestinian agriculture sector in competition with a heavily subsidized Israeli sector.⁷³ The de-development⁷⁴ of agriculture in Palestine has also led to a trade imbalance with Israeli exporters, now constituting 81% of the total trade value, up from 62.6% in 1999.⁷⁵

The Israeli agricultural economy has also benefitted from the adoption of export production in Palestine. In Gaza, the primary exports are perishables like cut-flowers and strawberries. At the height of the export project, Gaza could annually export 55 million carnation flowers, though only with Israeli permission and only through Israeli exporting companies.⁷⁶ Due to closures and the siege the flowers are now more commonly found rotting⁷⁷ at the borders, in storage or in greenhouses. Between April 2009 and April 2010 COGAT⁷⁸ (Israeli occupation administration agency) allowed only 118 trucks of export crops to exit the enclave,⁷⁹ although the 2005 agreement signed between the Palestinian Authority and COGAT stipulates a flow of 400 export trucks from Gaza each day⁸⁰. Commodity production in Gaza has made farmers more dependent on the Israeli occupation infrastructure.

Aid agencies have sometimes played a role in supporting the status quo of the occupation by supporting export agriculture projects but not calling for an end to

⁷⁰ Red Cross deputy chief: More than half of Gaza youth rely on foreign aid" *Haaretz* (23 May 2011). Accessed 30 May 2011 at <http://www.haaretz.com/news/diplomacy-defense/red-cross-deputy-chief-more-than-half-of-gaza-youth-rely-on-foreign-aid-1.363575>.

⁷¹ Sahar Taghdisi-Rad (2011), *op. cit.* Email interview with Dr. Ahmed Abu Shaban, Assistant Professor, Faculty of Agriculture, Al Azhar University (October – December 2011) in Zurak and Gough (in press), *op. cit.*

⁷² *Ibid*, 190.

⁷³ *Ibid*, 42.

⁷⁴ De-development is "The deliberate, strategic and progressive dismemberment of an indigenous economy by a dominant one, where economic – and by extension, societal – potential is not only distorted but denied. De-development therefore deprives an economy of the mechanisms to pursue rational structural transformation and prevents the emergence of any self-correcting measure". Sara Roy, *Failing Peace: Gaza and the Palestinian – Israeli Conflict*. (Ann Arbor: Pluto Press, 2007), 285.

⁷⁵ WFP. *The Impact of Closure and High Food Prices on Performance of Imported Staple Foods and Vegetable and Fruits Market in the oPt*. (December 2009), 22.

⁷⁶ ANERA (2011), *op. cit.*, 4.

⁷⁷ Al Mezan Centre for Human Rights *Cut-Flowers in Gaza: A Special Report on the Impacts of Israeli Rights Violations on Gaza's Cut-Flower Business*. (2007), 10.

⁷⁸ Coordinator of Government Activities in the Territories

⁷⁹ Physicians for Human Rights Israel, *Humanitarian Minimum: Israel's Role in Creating Food and Water Insecurity in the Gaza Strip* (December 2010), 50.

⁸⁰ Agreement on Movement and Access, signed on November 15, 2005, <http://www.eubam-rafah.eu/portal/node/11>; Office for the Coordination of Humanitarian Affairs, Humanitarian Monitor, June 2010. Quoted in *Ibid*.

the siege policies and unequal trade relationship.⁸¹ The avoidance of the occupation as the driving force behind food insecurity and the control over Palestinian livelihoods and resources reinforces the use of food as a tool of control. Certain agencies have also maneuvered themselves into a position that exempts them from any regulation. This means that they, or any company they have contracts with, do not have to submit any documentation or reporting to Palestinian Authority officials.⁸² Such a relationship severely restricts the ability of Palestinians to make decisions about the actions of aid agencies in their communities.

In order to fully recover, people in Gaza do not require further food aid assistance, but rather an end to Israeli occupation. In a conflict about land it makes little economic or strategic sense for Palestinians to abandon their agricultural sector for local production.

4. *Innovation Under Siege: Gaza*

It is commonly debated on how and if it is relevant to apply the term and concept of resilience to situations of protracted food and farming crises and conflict.⁸³ Coping mechanisms are understood as the way people deal with severe food insecurity while resilience implies a longer term perspective and actions that could have a positive consequence in the ability of populations to survive food crises. It is clear that resilience is not a substitute for sovereignty. The goal of the occupation and siege on Gaza, just as occupation and siege are used in other contexts, is to erode Palestinian decision-making and agency over their lives and resources. While chronic food insecurity is rising in Gaza, there are examples of innovative solutions created by people in Gaza in order to retain some economic and political agency over their food and farming systems.

It is our position that these examples represent innovative initiatives on the part of the people in Gaza. They do not qualify the occupation or make the siege on Gaza less severe. What they do offer is a chance to learn from community-based innovations. Instead of creating interventions based on external models, agencies and academics should be learning from context specific initiatives.

a. *From Besieged Farmers to Besieged Families*

Direct aid from farmer to family is a kind of food aid that has recently received more attention. Instead of distributing imported food aid packages, the Palestinian Agricultural Relief Committees (PARC) has been purchasing food from farmers and cooperatives at reasonable prices and distributing food baskets to the most food insecure families in Gaza.

⁸¹ Sahar Taghdisi-Rad (2011), *op.cit.*, 169.

⁸² Ibid

⁸³ High Level Expert Forum Technical Meeting. 28-29 June 2012. Slide Synthesis.

In its eighth year, the idea for the project originated from a group of farmers in southern Gaza, near Rafah. PARC was working with the World Food Programme on a traditional food aid project in the area. The WFP project was a work for food program that distributed imported food parcels composed of products made from generic wheat, corn and sugar to poor families. Farmers from the area came to PARC and suggested they purchase fresh food and goods from them instead of the imported food.

PARC has expanded the direct aid project with funding from the Arab Group for the Protection of Nature (APN), Christian Aid and the Arab Organization for Agricultural Development (AOAD). While assisting farmers and families, the project also offers jobs to farmers from the access restricted zones, many of whom are unable to support themselves by farming as much of their land is inaccessible or has been destroyed by the Israelis. PARC employs these farmers as part of the organizing, packaging and distribution of the food into baskets. Similar to a community supported agriculture (CSA) system, each food basket holds enough goods for about 20 days.

Available food varies with the season, but baskets often contain olives, citrus, guava, peppers, cucumber, tomatoes, and potatoes. Fresh fruits and vegetables are crucial sources of micronutrients that are often not included in traditional food aid parcels.⁸⁴ There are between two to three growing cycles for vegetables in Gaza per year, which could provide ample fresh food for direct aid programs. Some baskets also include chicken and eggs. PARC also purchases products from agricultural cooperatives; many of them run by women. These are often products that require some processing like zataar, honey and dried herbs like chamomile, mint and cilantro.

From Besieged Farmers to Besieged Families is a combination of relief effort and development. The project assists families, but also helps the local farming economy. Creating and accessing local markets offers farmers a more sustainable option than struggling to export goods through restrictive Israeli occupation policies. It is our position, and the position of many CSOs in Gaza that in order for projects to be successful, they must combine relief efforts with a strengthening of the local farming system. If funders are only interested in funding relief efforts they can do more damage than good by ignoring existing projects.

PARC's project has reached 50,000 families across its eight-year history. Currently there are 2,000 families in the program and around 500 farmers and producers. From Besieged Farmers to Besieged Families is an innovative program that could be expanded in Gaza, as well as in other places of protracted crises. PARC is working with CARE International to make a model of the program. There are similarities between PARC's program and programs in the U.S. in which food banks are operating farms or distributing food directly from

⁸⁴ World Health Organization (WHO). May 2009. *Report of the Specialized Health Mission to the Gaza Strip*.

small farms.⁸⁵ This is a sign that supporting programs like From Besieged Farmers to Besieged Families in Gaza could offer lessons in food aid, combating hunger and supporting small farm economies around the world.

b. Repairing Agricultural Roads

Gaza's landscape is often identified with piles of rubble, the debris and ruins left from Israeli incursions over the past several years.⁸⁶ The December 2008-January 09 "Operation Cast Lead" destroyed countless homes, infrastructure and farms, leaving 600,000 tons of rubble.⁸⁷ To compound matters, the Israelis have banned the entrance of construction materials into Gaza.⁸⁸

In order to repair the damage, use the rubble and subvert the Israeli restrictions on materials, small businesses, universities and organizations have worked together in Gaza. They have built rubble crushers using only the materials available. Small workshops used local engines from older machines. The engines were installed in devices often made in cooperation with the Engineering Faculties of universities in Gaza. The crushers are used for the reconstruction of roads as well as for building materials like the sand and small stones used in the process of creating concrete. Cement is imported through the tunnels between Egypt and Gaza and is combined with these small stones and used to rebuild Gaza.

PARC has partnered with workshops in Gaza in the rehabilitation of 100 kilometers of agricultural roads destroyed by the Israeli army. The rubble from Israeli destruction is then used to repair the damage they inflicted on agricultural economy. PARC and others have focused on repairing agricultural roads near the access-restricted areas. There are still many damaged areas in Gaza that need repair, the United Nations Institute for Training and Research (UNITAR) Operational Satellite Applications Programme (UNOSAT) estimates that 167KM of paved road, 187 greenhouses and 2,100 hectares of cultivated land were destroyed or severely damaged by the Israeli army in the 2008-09 attack.⁸⁹

Repairing infrastructure like these roads, assists farmers in accessing their land and in connecting farmers to markets in Gaza's urban areas. This multi-disciplinary approach to problem solving involved local NGOs, universities and the private sector and is an example of an innovation completely invented by local communities. Such efforts to create opportunity for farmers and business in

⁸⁵ See for examples: Bellingham Food Bank Farm

http://www.bellinghamfoodbank.org/our_programs/food_bank_farm. And a farm leasing land from a food bank, <http://www.foodbankwma.org/what-we-do/food-bank-farm/>

⁸⁶ See "Gaza Living in the Rubble". 9 February 2009. *The Guardian*.

<http://www.guardian.co.uk/world/video/2009/feb/10/gaza-israel-election>

⁸⁷ UN News Centre. "UN Demands Return of Seized Gaza Aid". 4 February 2009

<http://www.un.org/apps/news/story.asp?NewsID=29769&Cr=Gaza&Cr1>

⁸⁸ The ban on construction materials is still in place today. Gaza Live Blog. 8 June 2012. *The Guardian*. <http://www.guardian.co.uk/world/blog/2012/jun/08/gaza-live-blog>

⁸⁹ UNOSAT. 19 February 2009. "Satellite - based Gaza damage assessment overview"

the aftermath of violence and under a debilitating siege could be further supported by the institutional framework of international aid agencies.

With more support and international pressure, the livelihoods of people in Gaza that depend on collecting rubble could also be addressed. Rubble collection in Gaza is a dangerous occupation and Israeli snipers have shot many people, including children, as they collect rubble near the access restricted zones.⁹⁰ Israeli snipers will also shoot the animals like horses and donkeys used by Palestinians to pull carts carrying the collected rubble.

c. Home Gardens and Urban Agriculture

Small-scale urban agriculture and home gardens have played an important role in the history of Palestinian urban development and resistance to occupation. During the first intifada, localized agriculture and gardens were one of the ways Palestinian towns survived long Israeli imposed curfews, movement restrictions and the absence of imported food. Any available unbuilt space was used for planting and residents of towns and refugee camps shared the produce among nearby families. Basic foods like vegetables, milk, poultry and eggs were shared in this way.⁹¹

Families in Gaza, especially in densely built refugee camps that may lack garden space, also frequently utilize rooftop gardens. Chickens, pigeons and rabbits are all raised on rooftop gardens. Urban and rural agriculture practices on this small-scale function as sustainable systems. The rabbits and chickens are primarily fed from the kitchen and garden waste.

It is estimated that 30% of homes in Gaza have kitchen or rooftop gardens. Vegetables, poultry and eggs are complimented in some gardens by trees like lemon and olive, grape vines and medicinal herbs. If formalized and supported, kitchen and rooftop gardens could be expanded to include date palms, guava trees, seed saving practices and even small ponds for raising fish.⁹²

The efforts to support home and rooftop gardens in Gaza have coalesced around the Gaza Committee for Urban Agriculture that aims to support gardens by offering trainings on household composting and water conservation.⁹³ While urban agriculture plays an important role in helping Gazans deal with food insecurity, Gaza's increasing population and decreasing space limit its success. Access to water, land and start-up garden costs like seeds and tools are also factors in limiting the spread of urban agriculture throughout Gaza.

⁹⁰ Defence for Children International: Palestine Section, "Urgent Appeal: Shooting and shelling of children working near the border" (Updated: 17 January 2012)

⁹¹ Ahmed Sourani. 2012. "Urban agriculture in Gaza: an innovative community approach to enhance food security and resilience" Draft paper

⁹² Ibid

⁹³ Ibid

5. Conclusion

Since its formation on the majority of the land of mandatory Palestine in 1948, the Israeli state used the determinants of food security as a weapon to control populations. While our paper tackles the extreme case of Gaza, its lessons can be applicable in the West Bank, but also in many countries and communities afflicted with asymmetrical political and economic relationships.

Our paper expanded the definition of food security, not merely to the “availability of” or the “access to” food, but rather to include the political and economic conditions that allow or forbid access to resources of food production. By re-orienting the definition of food security to include a foundation in food sovereignty, we highlight possible policies already in practice in Gaza to reverse the trend of increasing food insecurity.

The paper is in agreement with Zurayk and Gough (in press), that there are two interlinked forces confronting Gaza’s food and farming systems. ⁹⁴The evident force is the Israeli occupation, with its the usurping and destruction of natural resource, and the enforcement of asymmetric food trade relationships. The second force is the funding infrastructure that commodified Gaza’s agricultural production exacerbating food insecurity.

Hence it is vital that any framework developed on food security incorporates clear terms on how all parties including governments, multilateral institutions, the donor community, and civil society should act in times of crises. Special analysis and guidance should be given to the work of development and aid agencies in avoiding terms and conditions that undermine the right of self-determination, and the capacity of local food production for the recipient country.

All parties have much to learn from local innovations developed by the community and proven to be helpful in difficult times. Community based innovations reduce the risk of households from being susceptible to chronic food insecurity. Urban Agriculture, buying local produce for aid, and recycling rubble into agricultural infrastructure, help households cope after and during sustained food crises. However, as mentioned earlier in the paper, the long-term food crisis in Gaza indicates that coping mechanisms and resilience have reached their limit⁹⁵. While these innovations are exciting, they cannot take the place of free access to land and fishing waters currently occupied and destroyed by the Israeli occupation. Nor can they replace the freedom to make decisions on what and how to export or import agricultural products. People in Gaza will continue to make decisions about their food and farming systems with the limited resources

⁹⁴ Rami Zurayk and Anne Gough, *Control Food Control People: The Struggle for Food Security in Gaza*, Institute for Palestine Studies, in Press, 56

⁹⁵ FAO and WFP, 2011, *op cit*, 8

at their disposal, even under siege and occupation. The question is, how will the international community, governments and aid agencies respond. It remains to be seen if they will embrace such innovations and simultaneously work for an end to the root cause of the protracted food crisis in Gaza – the Israeli occupation.

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