

## Targeting infrastructure and livelihoods in the West Bank and Gaza<sup>1</sup>

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*This is a pre-copyedited, author-produced version of an article accepted for publication in International Affairs following peer review. The version of record is available online at International Affairs, <https://doi.org/10.1093/ia/iiz015>*

### Published:

11 February 2019

The twenty-first century is increasingly an era of protracted conflict.<sup>2</sup> While major twentieth century wars were presumed to have a clear beginning and end, violence and armed conflict has persisted in many regions long after interstate wars were declared over. Protracted conflicts are not fought solely between militaries, but instead by a multitude of armed groups, while civilians and cities bear the brunt of hostilities.<sup>3</sup> A subset of protracted conflicts are also prolonged occupations, that is asymmetric conflicts in which a dominant actor has occupied the territory of another.<sup>4</sup>

Historically, international law as expressed in Article 43 of the 1907 Hague Regulations considered occupations of territory to be temporary and sought to delineate the obligations of an occupying power to ‘restore, and ensure, as far as possible, public order and safety, while

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<sup>1</sup> Our thanks to Christina Herrick, University of New Hampshire, for making the maps and Carley Reynolds at Duke University for generating the figures. The authors gratefully acknowledge Matt Goduto, Elisabeth Lohmueller, and Morgan Browning for their excellent research assistance. We also thank the anonymous reviewers and the editors for their constructive feedback. This research was supported by grants from the Gerda Henkel Stiftung, Germany, and the University of New Hampshire’s Collaborative Research Excellence Initiative. Portions of the paper were presented at the Geneva Water Hub, Geneva, Switzerland, November 9, 2018; World Water Week, Stockholm, Sweden, August 30, 2018; World Congress for Middle Eastern Studies, Seville, Spain, July 17, 2018; and at the International Studies Association Annual Meeting, San Francisco, April 4-7, 2018. Our thanks for the thoughtful comments and questions from discussants and attendees.

<sup>2</sup> Lawrence Freedman, ‘The rise and fall of Great Power wars’, *International Affairs*, 95: 1, 2019, pp. 101-118.

<sup>3</sup> Others have referred to protracted conflict as persistent conflict. Iavor Rangelov and Mary Kaldor, ‘Persistent conflict’, *Conflict, security, and development* 12: 3, 2012, pp. 193-99.

<sup>4</sup> Article 42 of the 1907 Regulations concerning the Laws and Customs of War on Land defines territory as occupied ‘when it is actually placed under the authority of the hostile army. The occupation extends only to the territory where such authority has been established and can be exercised’.

respecting, unless absolutely prevented, the laws in force in the country'.<sup>5</sup> In practice, occupations typically persist over long periods of time, even as occupying powers insist that their presence is temporary. Prolonged occupations are maintained by the creation and evolution of distinctive 'occupation regimes'<sup>6</sup>, that is, specific legal, administrative, and extra-legal systems that seek to control local populations and resources.<sup>7</sup> Prolonged occupation regimes also often seek to alter demographic balances in occupied territories in favor of the occupying power through settler expansion.<sup>8</sup>

Protracted conflicts and/or long occupations have been a persistent feature in much of the Middle East, including Iraq, Lebanon, Israel/Palestine, Sudan and South Sudan, Yemen, Western Sahara, and south-eastern Turkey, among others. In these places, occupation regimes and intermittent violent conflict have undermined the provision of basic water, energy, health, and sanitation infrastructures. In the absence of durable conflict settlements, humanitarian organizations have increasingly assumed state-like functions in providing infrastructure and some level of basic services, including health, education, housing, water, and electricity. Consequently, the Middle East and North Africa (MENA) has emerged as one of the largest arenas for humanitarian action. The International Committee of the Red Cross (ICRC) reports that 31 per cent of its field budget in 2017 was designated for countries in the Near and Middle East, exceeded only by that of Africa at 41 per cent. Four of the five largest ICRC humanitarian operations are in the Middle East, namely, Syria, Iraq, South Sudan, and Yemen.<sup>9</sup> In Lebanon and the occupied Palestinian territories, the ICRC has been working for over 60 years. In 2017,

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<sup>5</sup> On the international law of occupation, see Eyal Benvenisti, *The international law of occupation* (Oxford: Oxford University Press, 2012).

<sup>6</sup> Ariella Azoulay and Adi Ophir, *The one-state condition: occupation and democracy in Israel/Palestine* (Stanford, CA: Stanford University Press, 2013).

<sup>7</sup> Neve Gordon, *Israel's occupation* (Berkeley, CA: University of California Press, 2008).

<sup>8</sup> Ian Lustick, *Unsettled states, disputed lands* (Ithaca, NY: Cornell University Press, 1993); Oded Haklai and Neophytos Loizides, *Settlers in contested lands: territorial disputes and ethnic conflicts* (Stanford, CA: Stanford University Press, 2015).

<sup>9</sup> <https://www.icrc.org/en/document/icrc-appeal-fund-its-operations-2018>

the Office of the UN Special Coordinator for the Middle East Peace Process (UNSCO) described the humanitarian situation in the West Bank and Gaza Strip as a ‘protracted protection crisis’, as nearly two million people were expected to receive some form of humanitarian assistance, of which nearly 1.2 million were in the Gaza Strip.<sup>10</sup>

In this article, we explore the effects of protracted conflict and prolonged occupation through the lens of targeting civilian and environmental infrastructures for the cases of the West Bank and Gaza Strip. This work is a part of larger project exploring the effects of direct and indirect targeting of infrastructures in conflicts across the MENA.<sup>11</sup> While a number of studies focus on the targeting of civilians in violent conflict or the long-term socio-economic implications of conflicts on migration and refugees,<sup>12</sup> our focus is on how repeated cycles of direct and indirect targeting of infrastructure undermine livelihoods and human security.<sup>13</sup> As a human rights NGO representative working on Gaza noted, ‘infrastructure is an underlying issue that affects everything’.<sup>14</sup> We analyze who targets water, energy, and agricultural infrastructures and how for the period 2006-2017. We further explore how humanitarian actors have responded to the undermining of water, energy, and food security.

Our analysis draws upon an original database compiled by the authors that tracks the targeting of environmental and civilian infrastructures across the MENA.<sup>15</sup> For Israel and the

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<sup>10</sup> Office of the UN Special Coordinator for the Middle East Peace Process (UNSCO), *Report to the Ad Hoc Liaison Committee* (May 2017).

<sup>11</sup> Jeannie Sowers, Erika Weinthal, and Neda Zawahri, ‘Targeting environmental infrastructures: international law and infrastructural wars in the Middle East and North Africa’, *Security Dialogue* 48: 5, 2017, pp. 410-30.

<sup>12</sup> Alexander Downes, *Targeting civilians in war* (Ithaca, NY: Cornell University Press, 2008); Sarah Kenyon Lischer, ‘Causes and consequences of conflict-induced displacement’, *Civil Wars* 9: 2, 2007, pp. 142-155.

<sup>13</sup> Human security turns attention away from nation-state security to that of communities and individuals. Jon Barnett, Richard A. Matthew, and Karen L. O’Brien, ‘Global environmental change and human security: an introduction’, in R. Matthew, J. Barnett, B. McDonald, and K. O’Brien, eds., *Global environmental change and human security* (Cambridge, MA: MIT Press, 2010), pp. 3-32.

<sup>14</sup> Authors’ interview with representative from human rights group, 9 Aug. 2017; Jan Bachmann and Peer Schouten, ‘Concrete approaches to peace: infrastructure as peacebuilding’, *International Affairs*, 94: 2, 2018, pp. 381-398.

<sup>15</sup> For detailed, full-color maps and additional information on the database, see <https://sites.nicholas.duke.edu/time/>. The authors’ Coding Handbook and coding of the data used in this article are available upon request.

Palestinian territories, the database includes 982 discrete incidents of state and non-state actors targeting infrastructure, drawn from published news articles, UN documents, and human rights reports, from 2006 to 2017.<sup>16</sup> The analysis draws on 28 interviews with NGOs, humanitarian and development assistance actors, and government officials in Israel, Geneva, and East Jerusalem in 2017 and 2018, as well as aggregate accounts of infrastructure destruction compiled by the UN, public utilities, and human rights groups.

Scholars have devoted significant attention to the effects of Israel's occupation practices on Palestinian livelihoods, human security, and water resources.<sup>17</sup> In this article, we expand upon this body of work to explore how the targeting of infrastructure has hindered access to basic services and undermined livelihoods, and also illuminate how practices of infrastructure targeting have differed in the West Bank and in the Gaza Strip. In the West Bank, we argue that the targeting of infrastructure is a form of 'slow violence' in which the adverse impacts of restrictions on infrastructure development, targeting of infrastructure by settlers, and expropriation of resources accumulate over time.<sup>18</sup> As our data shows, the targeting of infrastructure is conducted largely by Israeli authorities and by the settler population living in the West Bank. The result is that many Palestinian communities have increasingly limited access to water, land, and energy.<sup>19</sup> In the Gaza Strip, in contrast, recurrent violent conflict between Israel and Hamas have resulted in more extensive destruction across all forms of infrastructure.

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<sup>16</sup>For coding purposes, we break down actors according to the following categories: internal national government, external national government, international coalition, internal non-state group, and external non-state group.

<sup>17</sup>See, among others, Azoulay and Ophir, *The one-state condition*; Gordon, *Israel's Occupation*; Sara Roy, *The Gaza Strip: the political economy of de-development, 3<sup>rd</sup> edition* (Washington, DC: Institute for Palestine Studies, 2016); Yael Berda, *Living emergency: Israel's permit regime in the occupied West Bank* (Stanford, CA: Stanford University Press, 2018); Jan Selby, 'Cooperation, domination and colonisation: the Israeli-Palestinian joint water committee', *Water Alternatives* 6:1, 2013, pp. 1-24; Mark Zeitoun, *Power and water in the Middle East: the hidden politics of the Palestinian-Israeli conflict* (London: I.B. Tauris, 2008).

<sup>18</sup>Rob Nixon, *Slow violence and the environmentalism of the poor* (Cambridge, MA: Harvard University Press, 2011).

<sup>19</sup>In many of the documents we coded, references were made to the Israeli authorities as being the actor carrying out the targeting of infrastructure. When we parsed the incidents, Israeli authorities often refer to the Israeli military and decisions made by the Civil Administration in the West Bank.

Reconstruction and infrastructure investments are hampered by an international blockade enforced by Israel and Egypt, which has left Gazans increasingly impoverished and dependent on humanitarian assistance.

### **Protracted conflict and prolonged occupation: impacts of targeting infrastructure**

The targeting of infrastructure has long been a part of conventional war, as for example, during WWII when cities and civilian infrastructure came under sustained attack in Europe and in Asia. During the 1990s, the US adopted new air power doctrines that sought to legitimize airstrikes on urban infrastructures, including electrical, oil, and communication infrastructures. In the 1991 Gulf War, coalition bombing of Iraq's infrastructure was ostensibly to paralyze daily life and incite protest against Saddam Hussein's regime without causing many immediate casualties.<sup>20</sup>

While using air power to 'switch cities off' was presumed to reduce civilian casualties by shortening conflict duration, scholars and public health officials concluded that bombing civilian infrastructures produce more civilian deaths over time.<sup>21</sup>

Airpower, however, is not the only means used to target infrastructure in the MENA nor are militaries the only groups involved in targeting infrastructure. Our approach to targeting infrastructure is broader than a focus on aerial warfare; we are concerned with the long-term and 'indirect' targeting of civilian infrastructures that sustain urban social fabrics and economic livelihoods. Our research shows that both state and nonstate actors have targeted civilian infrastructures across the region, and that bulldozers, tanks, and other means are used to destroy agricultural land and water infrastructures.

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<sup>20</sup> John A. Warden III, *The air campaign: planning for combat* (Washington, DC: National Defense University Press, 1988); John A. Warden III, 'The enemy as a system' *Airpower Journal* 9:1, 1995: 41-55. For a critical discussion, see Stephen Graham, 'Switching cities off: urban infrastructure and US air power' *City* 9: 2, 2005, pp. 169-94.

<sup>21</sup> Graham, 'Switching cities off'; Neta C. Crawford, 'Targeting civilians and U.S. strategic bombing norms', in M. Evangelista and H. Shue, eds., *The American way of bombing: changing ethical and legal norms, from flying fortresses to drones* (Ithaca, NY: Cornell University Press, 2014), pp. 64-86.

Destroying civilian infrastructure under conditions of protracted conflict and occupation produces long-term ‘reverberating effects’ that disrupt essential water and energy services, leading to adverse long-term effects on human welfare and ecosystems.<sup>22</sup> Food systems – including the cultivation, storage, and distribution of crops and food – also rely on the provision of energy and water; when these are absent, food scarcity, malnutrition, and sometimes starvation ensue. Restrictions on movement and prolonged closures of territory limit economic activity and foster ‘black’ or informal markets. As economic activity contracts, incomes decline, trade collapses, and public service providers receive fewer revenues to invest in infrastructure. Areas under protracted conflict and prolonged occupation further find it difficult to attract foreign and private investment necessary to maintain or sustain public services.

In the absence of sustained peace settlements, subsequent fighting destroys reconstruction gains made during cease-fires. Remaining urban infrastructures are frequently overtaxed by lack of repairs and influxes of refugees and forcibly displaced persons.<sup>23</sup> Under situations of prolonged occupation, occupying powers often enact a range of practices including curfews, closures, control over wage and salary payments of public servants, and unfavorable terms of trade, among others, which undercut economic development.<sup>24</sup> All these factors foster ‘de-development’ or ‘development in reverse’, a situation in which basic indicators of human well-being decline as a result of policy choices.<sup>25</sup>

For humanitarian actors, the dynamics of protracted conflict and prolonged occupation raise a number of profound challenges. While international humanitarian actors are designated as

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<sup>22</sup> Mark Zeitoun and Michael Talhami, ‘The impact of explosive weapons on urban services: direct and reverberating effects across space and time’ *International Review of the Red Cross* 98:1, 2016, pp. 53-70.

<sup>23</sup> Sowers et al., ‘Targeting environmental infrastructures’; Stephen Graham, *Cities under siege: the new military urbanism* (London: Verso Books, 2011).

<sup>24</sup>Roy, *The Gaza Strip*.

<sup>25</sup> Paul Collier, Lani Elliot, and Håvard Hegre, *Breaking the conflict trap: civil war and development policy* (Washington, DC: World Bank and Oxford University, 2003); Roy, *The Gaza Strip*.

the first to intervene in a crisis, increasingly they remain for the long term without a clear end in sight. Peter Mauer of the ICRC highlighted the tension between the organization's original mandate of emergency response with the needs engendered by protracted conflicts, noting that 'the conflicts in which we operate are increasingly protracted – long term, fragmented and complicated: in our ten largest operations, we have been on the ground for an average of 36 years'.<sup>26</sup> Repeated cycles of violence alongside conditions of occupation undermine the ability of humanitarian actors to deliver assistance. Their investments in civilian infrastructure are repeatedly targeted, as are their staff and facilities, without compensation or means to hold violators of international humanitarian law (IHL) accountable.

Owing to these wide-ranging impacts on civilians and ecosystems from targeting infrastructure in protracted conflict and occupation, we turn to our case study of the West Bank and Gaza Strip. Fifty years of occupation in the territories has deepened scholarly interest in assessing the evolution of this prolonged occupation and its relationship to protracted conflict. Our analysis highlights how the targeting of water, energy and agricultural infrastructures in the context of a protracted occupation creates vulnerability and undermines livelihoods among occupied populations.

### **Protracted conflict and prolonged occupation in the West Bank and Gaza Strip**

The UN Security Council first used the term 'prolonged occupation' with regard to the West Bank and Gaza Strip in 1980 -- 13 years after the occupation began in 1967.<sup>27</sup> Israeli discourse and legal analysis have long dealt ambiguously with whether the occupation of the

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<sup>26</sup> <https://www.icrc.org/en/document/speech-conduct-hostilities-challenges-contemporary-armed-conflicts>

<sup>27</sup> East Jerusalem also came under Israeli control. We analyze infrastructure targeting in East Jerusalem elsewhere, as it deserves special treatment.

Palestinian territories is temporary, protracted, or whether there is even an occupation.<sup>28</sup> The Israeli government has persistently argued that the Fourth Geneva Convention is not applicable to the Palestinian territories, and according to Aeyal Gross has thus pursued a ‘pick and choose’ policy in applying the international law of occupation.<sup>29</sup> As Azoulay and Ophir further point out in their landmark study of Israel’s ‘occupation regime’, presenting the occupation as ‘temporary’ is essential to generating public acquiescence, even as practices and regulations create facts on the ground that cannot be undone in any timely fashion.<sup>30</sup> These tensions emerge in Israel’s High Court of Justice (HCJ) decisions; while the court views the occupation as ‘inherently temporary’, it has also held that an occupation’s ‘temporariness can be long-lived’.<sup>31</sup> Israel’s disengagement from the Gaza Strip in 2005 sparked a further debate on the legal status of the Gaza Strip and whether it remains occupied.<sup>32</sup>

Israeli state institutions and actors involved in the prolonged occupation have evolved over time but remain largely under the remit of the military. Soon after occupying the West Bank and Gaza Strip in 1967, a separate military administration for the territories was established under then-Minister of Defense, Moshe Dayan, which became the Unit for the Coordination of Operations in the Territories.<sup>33</sup> In 1981, in the aftermath of the Israel-Egypt peace treaty (the Camp David Accords) in which Israel committed to greater autonomy for the Palestinian population in the territories, the Israeli government created the Civil Administration to institutionalize ‘the separation of direct military action from the administrative control of

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<sup>28</sup> Azoulay and Ophir, *The one-state condition*; Aeyal Gross, *The writing on the wall: rethinking the international law of occupation* (Cambridge, UK: Cambridge University Press, 2017); Orna Ben-Naftali, Aeyal Gross and Keren Michaeli, ‘Illegal occupation: framing the occupied Palestinian territory’, *Berkeley Journal of International Law* 23: 3 (2005), pp. 551-614.

<sup>29</sup> Gross, *The writing on the wall*, p. 151.

<sup>30</sup> Azoulay and Ophir, *The one-state condition*, pp. 226-28.

<sup>31</sup> Koutroulis, ‘The application of international humanitarian law and international human rights law in situation of prolonged occupation’, pp. 166-7.

<sup>32</sup> Gross, *The writing on the wall*; Iain Scobbie, ‘An intimate disengagement: Israel’s withdrawal from Gaza’, *Yearbook of Islamic and Middle Eastern Law* 3 (2004-2005), pp. 3-31.

<sup>33</sup> Shlomo Gazit, *Trapped fools: thirty years of Israeli policy in the territories* (London: Frank Cass Press, 2003).



Palestinian life'.<sup>34</sup> While ostensibly designed to separate civilian affairs from military ones, the Civil Administration was still subordinate to the military and security institutions.<sup>35</sup> In analyzing Israel's policies in the West Bank during the first two decades of the occupation, Meron Benvenisti underscores how the creation of the Civilian Administration constituted 'the transformation from a temporary to a permanent system' of occupation.<sup>36</sup>

The other main political actor that has played a significant role in both the direct and indirect targeting of infrastructure has been the settler population. Beginning in 1977 when the Likud Party under Menachem Begin assumed power, the Israeli government began to boost investments in Jewish settlement expansion and public works projects to link the settlements to the coastal towns in Israel, creating 'demographic facts on the ground'.<sup>37</sup> Overall, the rapidly expanded size and scope of Jewish-only settlements serviced by dedicated infrastructures and roads that deliberately bypassed Palestinian communities made it harder for Israeli society to disengage from the territories and changed the political relationship between the center and the peripheral territory.<sup>38</sup>

Decisions about infrastructure access and development were further shaped by provisions of the Oslo Accords negotiated between Israel and the Palestinian Liberation Organization (PLO). The 1993 Declaration of Principles on Interim Self-Government Arrangements (Oslo I), established a transitional period in which negotiations over 'permanent status' issues such as the settlements and borders were to be delayed for up to five years. The 1994 Cairo Agreement

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<sup>34</sup> Azoulay and Ophir, *The one-state condition*, p. 68. Military Order 947 (8 Nov.1981) established the Civilian Administration. See Jonathan Kuttab and Raja Shehadeh, *Civilian administration in the occupied West Bank: analysis of Israeli Military Government Order No. 947*, Prepared for the Law in the Service of Man, January 1982.

<sup>35</sup> Gordon, *Israel's occupation*.

<sup>36</sup> Meron Benvenisti, *The West Bank data project: a survey of Israel's policies* (Washington, DC: American Enterprise Institute, 1984), p. 44.

<sup>37</sup> Oded Haklai, 'The decisive path of indecisiveness: Israeli settlers in the West Bank in comparative perspective', in Haklai and Loizides, *Settlers in contested lands*, pp. 17-39.

<sup>38</sup> Lustick, *Unsettled states, disputed lands*; Benvenisti, *The West Bank data project*; Eyal Weizman, *Hollow land: Israel's architecture of occupation* (London: Verso, 2007).

between the PLO's Yasser Arafat and Israel's Prime Minister Yitzhak Rabin established the Palestinian National Authority (PNA) in 1994. The 1995 Interim Agreement (Oslo II) divided the West Bank into three new administrative enclaves, Areas A, B, and C; the PNA was tasked with governing Area A and engaged in shared control with Israel in Area B. Despite the creation of the PNA, Israeli control over Palestinian livelihoods deepened through legal restrictions on infrastructural development, expropriation of Palestinian land, and the expansion of the permit system that restricts the movement of Palestinians in the West Bank.<sup>39</sup> This new array of bureaucratic mechanisms increasingly isolated Palestinian communities in the West Bank from each other and from the Gaza Strip.<sup>40</sup>

For Areas A and B in the West Bank, and for the Gaza Strip, the Oslo Accords transferred much responsibility for urban infrastructure and services to the PNA. However, the PNA was often unable to adequately provide these services given the neglected state of infrastructure and the adverse economic impact of closure and permit regimes. The lack of services and employment, combined with sustained settler expansion and lack of progress towards Palestinian statehood, contributed to the outbreak of the 2000 second *intifada* (uprising), which was significantly more militarized than the first intifada mass protest launched in the territories during 1987-1988. The second intifada prompted the Israeli government to construct a wall ('separation barrier') that carved further land out of the West Bank, and expand bypass roads, checkpoints, and other policies to entrench Jewish settlements in the West Bank. In contrast, Israel withdrew its troops and settlements from the Gaza Strip in 2005.<sup>41</sup> Together with Egypt, however, Israel retained control over land and sea borders and the movement of goods, money, and people in and out of the Gaza Strip. Decision-making regarding infrastructure

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<sup>39</sup> Berda, *Living emergency*.

<sup>40</sup> Anne Le More, 'Killing with kindness: funding the demise of a Palestinian state' *International Affairs* 81:5, 2005, pp. 981-99.

<sup>41</sup> Ben-Naftali et al., 'Illegal occupation.'

development in much of the West Bank and the Gaza Strip remained with Israel's Coordinator of Government Activities in the Territories (COGAT), which is comprised of the Civil Administration in the West Bank and the Coordination and Liaison Administration for Gaza.<sup>42</sup> Below we explore how prolonged occupation in the West Bank and the Gaza Strip has resulted in an institutionalized system of targeting infrastructure in the water, energy, and agricultural/fishing sectors, respectively.

### **The West Bank: slow violence and the targeting of civilian infrastructure**

At the outset of the occupation, Israel moved to integrate water and electricity infrastructures in the West Bank and Gaza Strip with those inside Israel, but left other basic services to the Palestinian local authorities, such as sanitation and garbage disposal.<sup>43</sup> Despite the Oslo Accords and the creation of the PNA, the Civil Administration in the West Bank retained significant decision-making authority for expanding access to the most basic forms of infrastructure –water, energy, and agriculture – through the permit system.<sup>44</sup> To understand how infrastructure is targeted in the West Bank, we present data from 2006 to 2017. Map 1 shows individual incidents of targeting water, energy, and agricultural infrastructures from our database; repeated incidents at the same geographic location are represented by larger circles.

#### Map 1 Here: Targeting of Infrastructure in the West Bank

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<sup>42</sup> COGAT became the successor to the Unit for the Coordination of Operations in the Territories. See Berda, *Living emergency*.

<sup>43</sup> Azoulay and Ophir, *The one-state condition*, p. 37; Gordon, *Israel's occupation*.

<sup>44</sup> Berda, *Living emergency*.

While much attention has focused on the water sector and the role of the Civil Administration and military forces,<sup>45</sup> our collected data illustrates how the logic of targeting infrastructure has directly disrupted Palestinian agriculture (such as uprooting trees and bulldozing soil) along with targeting water and energy infrastructures used for irrigation, planting, and harvesting. The vast majority of these agricultural incidents were carried out by the settler population residing in the West Bank. Figure 1 breaks down incidents by year for each sector, with a significant intensification of targeting incidents in 2012 and 2013. Of the 685 incidents documented, 516 targeted the agricultural sector (~75%), 140 targeted water (~20%), and 29 targeted energy (~4%) in the West Bank.

Figure 1 Here: Infrastructure Targeted in the West Bank

Below, we disaggregate our analysis into the three most representative sectors – water, energy, and agriculture – to illuminate patterns in the targeting of West Bank infrastructure. In doing so, we emphasize that the impacts of targeting water, energy, and agriculture are inextricably linked, due to their combined effects on livelihoods.

### *The water sector*

Upon occupying the West Bank in 1967, the military administration announced Military Order 92, which placed all powers concerning the management of West Bank water resources in a military appointee, resulting in increased centralization of water management and integration into the Israeli water system. Military Order 158 further prevented any person from establishing

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<sup>45</sup> Selby, 'Cooperation, domination and colonisation'; B'Tselem, *Thirsty for a Solution: the water crisis in the occupied territories and its resolution in the final-status agreement* (Jerusalem: B'Tselem, July 2000).

or operating a water installation without a license from the area commander. Israel also limited the number of new wells that could be dug.<sup>46</sup> Israel's control over water infrastructure development and extraction in the West Bank during the first decades of the occupation favored agricultural policies for Israeli farmers over Palestinian farmers. Israel's policies also provided unequal water allocations between Jewish settlements and Palestinian villages in the West Bank, with the latter experiencing water shortages.<sup>47</sup>

While the Oslo Accords formally recognized water rights for the Palestinian people, created a Palestinian Water Authority (PWA), and granted additional water resources in the northern part of the West Bank aquifer, the PWA never received full decision-making authority over water resource development. To coordinate water management and cooperation between Israel and the PA, a Joint Water Committee (JWC) was constituted to review proposed water projects in Areas B and C. Despite creating a veneer of cooperation between Israel and the PA via the JWC under Oslo, all water infrastructural decisions ultimately require a second approval from the Civil Administration.<sup>48</sup>

Our data confirms incidents in which Israeli authorities and settlers targeted water infrastructure in Area C. For example, early events in our database from 2008 find Israeli soldiers destroying water cisterns.<sup>49</sup> Humanitarian actors report a number of donor-funded water projects damaged by the Israeli authorities. In 2014, the UN Office for the Coordination of Humanitarian Affairs for the occupied Palestinian Territories (OCHA-oPt) documented a number of incidents in which latrines, water tanks, and water connections were seized.<sup>50</sup> Other

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<sup>46</sup> Miriam R. Lowi, *Water and power: the politics of a scarce resource in the Jordan River Basin* (New York: Cambridge University Press, 1993).

<sup>47</sup> Benvenisti, *The West Bank data project*; Naftali et al., 'Illegal occupation'; Yehezkel Lein, *Not even a drop: the water crisis in Palestinian villages without a water network* (Jerusalem: B'Tselem, 2001).

<sup>48</sup> Selby, 'Cooperation, domination and colonisation'.

<sup>49</sup> <https://www.un.org/unispal/document/opt-protection-of-civilians-ocha-weekly-report-9-15-jan-2008/>

<sup>50</sup> OCHA-oPt, *Fragmented Lives: Humanitarian Overview 2014* (East Jerusalem: OCHA-oPt, March 2015).

events include destruction of water supply infrastructure in early 2017, including water cisterns in the Bethlehem District and in the South Hebron Hills, as well as a water pipe in the Jordan Valley, all of which supplied water for farming purposes.<sup>51</sup> Our data contains a number of instances in which Israeli settlers targeted water infrastructure, as for example, when settlers damaged water tanks in the city of Nablus in 2010.<sup>52</sup>

Not all incidents involve the direct targeting of water infrastructure. We also track forms of slow violence that hamper community access to water by preventing investments in the water sector. We find that Israeli authorities have limited infrastructural development in the water sector, primarily in Area C, by refusing construction permits for building water infrastructure and connecting Palestinian villages to the water system; restricting access to local water sources, including fresh water springs, drilled wells, and rainwater cisterns; and preventing the repair of water infrastructure.<sup>53</sup> In reviewing the activities of the JWC, the World Bank found that as of 2009 the Civil Administration had ‘prevented all but one wastewater treatment plant from going ahead’ since the mid-1990s.<sup>54</sup> In 2009, OCHA-oPt documented an incident in Area C in which Israeli authorities stopped an international NGO from cleaning a water cistern due to lack of a permit.<sup>55</sup> Owing to the absence of a master plan for some villages located in Area C, such as the village of Al Aqaba (which is also located in a firing range in the Jordan Valley), villagers in 2014 needed to truck in water from other villages and remained unconnected to the water network.<sup>56</sup>

Long-term restrictions on water resource development have meant that parts of the

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<sup>51</sup> [https://www.btselem.org/video/20170228\\_demolition\\_of\\_water\\_infrastructure#full](https://www.btselem.org/video/20170228_demolition_of_water_infrastructure#full)

<sup>52</sup> [https://www.ochaopt.org/sites/default/files/ocha\\_opt\\_protection\\_of\\_civilians\\_2010\\_02\\_18\\_english.pdf](https://www.ochaopt.org/sites/default/files/ocha_opt_protection_of_civilians_2010_02_18_english.pdf)

<sup>53</sup> ACRI, ‘The right to water in the occupied territories: legal background’, February 2016.

<sup>54</sup> World Bank, *Assessment of restrictions on Palestinian water sector development*. Report No. 47657-GZ (Washington, DC: World Bank, 2009), p. 49.

<sup>55</sup> [https://www.ochaopt.org/sites/default/files/ocha\\_opt\\_protection\\_of\\_civilians\\_weekly\\_2009\\_03\\_31\\_english.pdf](https://www.ochaopt.org/sites/default/files/ocha_opt_protection_of_civilians_weekly_2009_03_31_english.pdf)

<sup>56</sup> [https://www.btselem.org/jordan\\_valley/al\\_aqabah](https://www.btselem.org/jordan_valley/al_aqabah).

Palestinian population lack access to sufficient water, especially in the summer, and that irrigation for agriculture is adversely impacted. According to the human rights organization B'Tselem, Palestinians in the West Bank consumed on average 80 liters per person a day in 2014; the World Health Organization recommends a 100-liter minimum for human needs. In contrast, the average water consumption for household, commercial, and industrial needs in Israel was 287 liters per person a day.<sup>57</sup> In the Palestinian city of Nablus, residents were only able to access approximately 65 liters per day, and had to purchase water from private suppliers at a higher cost than that of municipal water.<sup>58</sup> Interviews further underscore the long-term slow violence impacts of hindering access to water. According to a representative from a human rights organization, policies to restrict access to water have advanced the demographic and economic ‘fragmentation’ of the West Bank, especially in Area C.<sup>59</sup>

### *The energy sector*

Similar to the water sector, we find evidence of targeting energy infrastructure in the West Bank through direct and indirect means. Whereas our data shows that the agricultural and water sectors are the most targeted sectors in the West Bank, we also find a small number of incidents in which energy (four per cent) was targeted over the last decade. Incidents have ranged from damages to electricity transformers to demolishing newly-installed electricity connections to the theft of electricity generators. For example, in 2008 the Israeli military damaged the electricity transformer in the village of Marda.<sup>60</sup> In 2012 in Bethlehem, OCHA-oPt reported that Israeli

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<sup>57</sup> It is largely understood that the settlements in the West Bank use nearly the same amount of water as residents in Israel, approximately three times more than the Palestinian residents in the West Bank. See European Parliament, Water in the Israeli-Palestinian conflict, Briefing January 2016. Also see Elisabeth Koek, Water for one person only: discriminatory access and ‘water Apartheid’ in the OPT (Ramallah, Palestine: Al Haq, 2013).

<sup>58</sup> [https://www.btselem.org/water/20170913\\_acute\\_water\\_shortage\\_in\\_nablus](https://www.btselem.org/water/20170913_acute_water_shortage_in_nablus)

<sup>59</sup> Interview with representative from Israeli human rights organizations, 1 May 2017.

<sup>60</sup> [https://www.ochaopt.org/sites/default/files/Weekly\\_Briefing\\_Notes\\_250\\_English.pdf](https://www.ochaopt.org/sites/default/files/Weekly_Briefing_Notes_250_English.pdf)

authorities had demolished a network of ten electric poles that supplied electricity to a school.<sup>61</sup> Similarly, in 2013 Israeli authorities dismantled a network of 33 electric poles in the Nablus area in Area C.<sup>62</sup> A number of incidents also involved settlers targeting Palestinian energy infrastructure. For example, in 2010 armed Israeli settlers stole several electricity generators from the Beitillu village in the Ramallah governorate.<sup>63</sup>

For the Palestinian communities that lack adequate access to electricity, preventing investments in energy access negatively affects livelihoods. One notable example of targeting energy infrastructure is illustrated in the challenges faced by the NGO, COMET-ME, which has sought to provide energy to communities in the Hebron Hills. After the village of Jebbet Adh-Dhib unsuccessfully requested permission from Israel to connect to the central power grid since 1988, COMET-ME helped install a system of solar panels in the village with the support of Dutch development funding. In 2017, the Civil Administration confiscated 96 solar panels and electronic equipment, cutting power to 30 families.<sup>64</sup>

### *The agriculture sector*

Agriculture is a vital source of livelihood and income, providing some degree of food security and employment, and is a powerful tie between Palestinian communities and land use in the West Bank.<sup>65</sup> As in the water sector, the government of Israel has used a variety of legal and extra-legal means to change the agricultural landscape and expand control over resources in the

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<sup>61</sup>[https://www.ochaopt.org/sites/default/files/ocha\\_opt\\_protection\\_of\\_civilians\\_weekly\\_report\\_2012\\_08\\_17\\_english.pdf](https://www.ochaopt.org/sites/default/files/ocha_opt_protection_of_civilians_weekly_report_2012_08_17_english.pdf)

<sup>62</sup>[https://www.ochaopt.org/sites/default/files/ocha\\_opt\\_protection\\_of\\_civilians\\_weekly\\_report\\_2013\\_03\\_01\\_english.pdf](https://www.ochaopt.org/sites/default/files/ocha_opt_protection_of_civilians_weekly_report_2013_03_01_english.pdf). The reason given was the lack of a building permit.

<sup>63</sup> [https://www.ochaopt.org/sites/default/files/ocha\\_opt\\_protection\\_of\\_civilians\\_2010\\_11\\_05\\_english.pdf](https://www.ochaopt.org/sites/default/files/ocha_opt_protection_of_civilians_2010_11_05_english.pdf)

<sup>64</sup> Amira Hass, Dutch protest Israeli seizure of Palestinian solar panels they funded in West Bank. *Haaretz*. 1 July 2017.

<sup>65</sup> UNCTAD, *The besieged Palestinian agricultural Sector* (New York and Geneva: United Nations, 2015).



West Bank.<sup>66</sup> With regard to ownership of agricultural lands, Israeli authorities adapted provisions from the Ottoman Land Law to expropriate private land and convert it to state property.<sup>67</sup> Successive Israeli governments under both Labor and Likud leaderships facilitated the construction of Jewish-only settlements and bypass roads, often under the guise of security, as a form of *de facto* annexation of Palestinian agricultural land.<sup>68</sup> The growth of settlements further separated satellite villages in Areas A and B from each other and from agricultural lands in Area C.<sup>69</sup>

Agriculture is the most targeted sector in the West Bank, according to our data. Of 685 incidents in the West Bank, 516 of the incidents (75 per cent) were in the agricultural sector and nearly all directed at Palestinian citizens' livelihoods. Unlike the water and energy sectors, in which the Israeli authorities or military were primarily responsible for the destruction of infrastructure, Israeli settlers carried out approximately 65 per cent of the incidents in the agricultural sector. Nearly 70 per cent of the events collected involved olive and fruit trees. Targeting olive trees encapsulates the slow violence of resource capture in the West Bank, as olive trees are central to Palestinian identity, struggle, and economic livelihoods.<sup>70</sup> The Israeli military has justified uprooting trees in order to construct roads in Area C, conduct military operations or because trees were deemed too close to the separation wall. As Israel has moved forward with the construction of the separation barrier, human rights organizations have observed that the wall cuts some Palestinian agricultural lands from water supplies. This lowers agricultural production and market access in the short term and undermines sustainable

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<sup>66</sup> On the different actors, including the HCJ, and laws that have affected the dispossession of agricultural land in the West Bank, see Yehezkel Lein, *Land grab: Israel's settlement policy in the West Bank* (Jerusalem: B'Tselem, 2002).

<sup>67</sup> Gordon, *Israel's occupation*, p. 129. Lein, *Land grab*.

<sup>68</sup> Gordon, *Israel's occupation*, pp. 131-132.

<sup>69</sup> Since the Oslo Accords were signed, the population of the settlements has tripled; according to B'Tselem, there are 'more than 200 settlements and unauthorized outposts throughout the West Bank'. B'Tselem, *Reality check: almost fifty years of occupation* (Jerusalem: B'Tselem, 2016).

<sup>70</sup> Irus Braverman. 'The tree is the enemy soldier: a sociolegal making of war landscapes in the occupied West Bank, *Law & Society Review* 42 (3): 2008, pp. 449-82. Also see Gordon, *Israel's occupation*, p. 142.

livelihoods over the long term.<sup>71</sup>

*Humanitarian aid and infrastructure in the West Bank*

In efforts to halt the sustained targeting of agriculture, water, and energy infrastructures, Israeli and Palestinian human rights and civil rights groups have frequently invoked provisions of IHL, notably the Fourth Geneva Convention, and international human rights law that apply to occupying powers regarding the protection of civilians and civilian infrastructure.<sup>72</sup> The Association for Civil Rights in Israel (ACRI), for example, pointed out that the Israeli HCJ, in interpreting Article 43 of the Fourth Geneva Convention, “reiterated more than once that the state's obligation to ensure public order involves providing multiple services including health, education, welfare, transportation, and other needs ‘required for people in modern and civilized society’”.<sup>73</sup> These appeals, however, have largely been ignored.

Humanitarian actors and donors face significant restrictions in carrying out humanitarian activities and projects in the West Bank. Humanitarian organizations report that the permit system, which requires donors to receive formal approval from the Civil Administration for any infrastructural project, is the most important obstacle to investing or improving civilian infrastructures. In many instances, permits are never granted or the process drags on indefinitely, hindering humanitarian organizations from undertaking infrastructure repairs and investments designed to prevent civilian displacement.<sup>74</sup> In many instances that appear in our database, Israeli authorities confiscated donor-funded infrastructure.

Local and international humanitarian actors have sought to work around the delays and

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<sup>71</sup> Human Rights Watch, ‘Israel’s “separation barrier” in the occupied West Bank: human rights and international humanitarian law consequences,’ 20 Feb. 2004.

<sup>72</sup> Authors’ interviews with human rights groups, in East Jerusalem, West Jerusalem, Tel Aviv, and Geneva, 2017-2018.

<sup>73</sup> ACRI, ‘The right to water in the occupied territories: legal background’, February 2016.

<sup>74</sup> Author’ interviews with representative from humanitarian organization, East Jerusalem, 8 Aug. 2017.

refusals of permits for civilian infrastructure projects. Since 2013, a group of international organizations, international NGOs, and local NGOs, many of which comprise the Humanitarian Country Team in the occupied Palestinian territories, have opted to not participate in the permit process with the Israeli authorities for their work in Area C. These organizations argue that the protracted process of applying and waiting for permits that may never materialize obstructs the timely delivery of humanitarian assistance.<sup>75</sup> One NGO interviewee noted that their organization retroactively asks for a permit only once the Israeli authorities have embarked on the demolition process.<sup>76</sup> Indeed, while Israeli authorities may argue that what we define as targeting infrastructure is the removal of illegal construction, we contend that the deliberate bureaucratic obstruction of infrastructural projects and investment is a form of indirect targeting of essential infrastructure that undermines human security.

### **The Gaza Strip: war, siege, and the targeting of civilian infrastructure**

As in the West Bank, the Israeli government was solely responsible for infrastructural decisions in the Gaza Strip until the Oslo Peace Accords. When Israel disengaged unilaterally from the Gaza Strip in 2005, it also abdicated responsibility for decades of under-investment in water and energy infrastructures for the rapidly growing population of the Gaza Strip.<sup>77</sup> Israel's disengagement did not diminish but rather recast the role it plays vis-à-vis essential infrastructures in Gaza, even as the Israeli HCJ determined that Gaza was no longer legally a 'territory under belligerent occupation'.<sup>78</sup>

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<sup>75</sup> Author' interviews with representative from humanitarian organization, East Jerusalem, 8 Aug. 2017.

<sup>76</sup> Authors' interview with Israeli NGO, 8 Aug. 2017.

<sup>77</sup> Different human rights and humanitarian organizations made this claim to us in interviews.

<sup>78</sup> Koutroulis, 'The application of international humanitarian law and international human rights law in situation of prolonged occupation', p. 187; Gross, *The writing on the wall*.

When Hamas took power in the Gaza Strip after a series of military clashes with the PNA's dominant faction Fatah in 2007, an international embargo led by the US, EU, and Israel was elevated to an internationally-sanctioned blockade of the Gaza Strip, intended to intensify pressure on the Hamas government. Israel and Egypt retain control over Gaza's borders, limiting the movement of people and goods by sea, air, and land.<sup>79</sup> Both countries periodically relax and tighten the siege on Gaza. After the 2012 election of the Muslim Brotherhood's Mohamed Morsi in Egypt, for instance, Egypt opened the Rafah crossing more frequently and tolerated to some degree the extensive system of underground tunnels that connected the Sinai Peninsula to the Gaza Strip. The 2013 military coup led by now-President Abdel Fattah al-Sisi marked a hardening of Egypt's stance. Al-Sisi's government destroyed many tunnels and tightened the closure of persons through the Rafah crossing, as part of a broader crackdown on the Muslim Brotherhood in Egypt and Hamas in Gaza. Over the past decade, Gaza has thus been cut off from the West Bank by Israel and from Sinai by Egypt, creating a besieged enclave from which there is no easy exit.<sup>80</sup>

The relationship between Hamas and Israel especially under Prime Minister Netanyahu has remained fraught with recurrent periods of violent conflict in 2008-2009, 2012, 2014, and 2018. The Israeli government designated Gaza as 'hostile territory' and announced it will follow only the laws of armed conflict, not of occupation.<sup>81</sup> As a result of the extensive targeting of civilian infrastructures during these periods of conflict, we argue that the civilian population of the Gaza Strip has increasingly been treated as a collective casualty of armed conflict.

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<sup>79</sup> B'Tselem, 'Israel's control of the airspace and the territorial waters of the Gaza Strip,' 1 Jan. 2013. [http://www.btselem.org/gaza\\_strip/control\\_on\\_air\\_space\\_and\\_territorial\\_waters](http://www.btselem.org/gaza_strip/control_on_air_space_and_territorial_waters); UN Country Team in the Occupied Palestinian territory, *Gaza Ten Years Later*, July 2017.

<sup>80</sup> Le More, 'Killing with kindness,' p. 984.

<sup>81</sup> Roy, *The Gaza Strip*, p. xxvii.

Map 2 shows incidents of targeting water, energy, and agriculture infrastructure from 2006 to 2017 in Gaza; larger circles indicate repeated incidents at the same geographic location. Because of the importance of the fishing sector for livelihoods, we include damage to fishing infrastructure as part of the agricultural sector.

#### Map 2 Here: Targeting of Infrastructure in Gaza

The majority of the 297 incidents documented were nearly split between the agricultural sector (145 incidents, 49%) and the water sector (129 incidents, 43%), followed by 23 in the energy sector (8%). Table 2 highlights the spikes in incidents of targeting during the intermittent periods of violent conflict, as well as the distribution of targeting in different sectors. As for the West Bank, we disaggregate our findings for the water, energy, and agricultural sectors respectively.

#### Figure 2 Here: Infrastructure Targeted in Gaza

##### *The water sector*

Unlike the West Bank, which never gained full autonomy over its water resources, water management over the coastal aquifer in the Gaza Strip was transferred to the Palestinian Water Authority (PWA) after the signing of the Oslo Accords. To avoid further overpumping of the coastal aquifer in the aftermath of Oslo, the PWA sought to build desalination plants with donor support.<sup>82</sup> Repeated cycles of asymmetric, violent conflict between Israel and Hamas, however, extensively destroyed water infrastructure in the Gaza Strip. As Figure 2 shows, Israeli air

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<sup>82</sup> Also see, Erika Weinthal, Avner Vengosh, Amer Marei, Alexis Gutierrez, and Wolfram Kloppmann, 'The water crisis in the Gaza Strip: Prospects for remediation' *Ground Water* 43:5, 2005, pp. 653-60.

campaigns in Gaza particularly targeted the water infrastructure.

While water infrastructure was damaged during the 2008/2009 conflict, the 2014 summer conflict between Israel and Hamas left a further 450,000 Gazans without access to municipal water.<sup>83</sup> The Coastal Municipalities Water Utility – the service provider for all water and wastewater services in the Gaza Strip – carried out a water and wastewater infrastructure damage assessment in 2014 which found that water and wastewater facilities located three kilometers from the Eastern and Northern Gaza Strip borders had been completely demolished.<sup>84</sup> The Human Rights Council (HRC) documented that between July-August 2014, 63 water facilities were damaged and 23 completely destroyed in Gaza, resulting in a significant loss of water access for the population.<sup>85</sup> Likewise, the HRC found that the war damaged sewage facilities, including 60 per cent of the treatment plants, 27 per cent of the pumping stations, and 33, 000 meters of water and wastewater networks, affecting nearly one million people.<sup>86</sup> Consequently, the UN found that ‘access to safe drinking water in Gaza through the public water network plummeted from 98.3% in 2000 to a mere 10.5% in 2014, compared to almost 97% in the West Bank’.<sup>87</sup> Gazans rely on purchasing water through tankers, containers and bottled water. Reliance on these sources increased from 1.4 per cent to 89.6 per cent in 2017, all of which are more expensive and disproportionately hurt the most vulnerable and poor; moreover, the quality of water is unregulated and of questionable quality.<sup>88</sup>

Humanitarian efforts to augment water supply are hampered by restrictions imposed by Israel and Egypt on the import of materials to support the construction of desalination plants, as

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<sup>83</sup> <https://unispal.un.org/DPA/DPR/unispal.nsf/0/90164F24E91DC62A85257D490067170F>

<sup>84</sup> Coastal Municipalities Water Utility. Water and wastewater infrastructure damage assessment, 2014, p. 2.

<sup>85</sup> Human Rights Council (HRC), A/HRC/29/CRP.4, *Report of the detailed findings of the independent commission of inquiry established pursuant to Human Rights Council resolution S-21/1*. 24 June 2015, p. 156.

<sup>86</sup> HRC, *Report of the detailed findings of the independent commission of inquiry established pursuant to Human Rights Council resolution S-21/1*, pp. 155-6.

<sup>87</sup> UN, *Gaza ten years later*, p. 20.

<sup>88</sup> UN, *Gaza ten years later*, p. 20.

discussed in more detail below. Projects delayed by restrictions of imports and the ongoing energy supply shortage have included the Northern Gaza Emergency Sewage Treatment Plant and three Short Term Low Volume desalination plants, contributing to the deterioration in water quality and overpumping of the coastal aquifer.<sup>89</sup>

### *The energy sector*

The negative impacts on human security of targeting the energy sector are amply illustrated in the case of the Gaza Strip, as are the interdependence of water and energy infrastructures. We find a small number of discrete incidents of direct targeting of energy infrastructures, in part because in the Gaza Strip the energy infrastructure is centralized in one major power generation plant. The Israeli Defense Forces (IDF) bombed the single Gaza power plant in conflicts with Hamas in 2006 and 2014, dramatically cutting power supplies to Gaza.<sup>90</sup> The blockade enforced by Israel and Egypt on the Gaza Strip since 2007 has limited reconstruction efforts and sharply curtailed imports of fuel through the formal border crossings. Both countries have sought to stop the smuggling of fuel through the underground tunnels into Gaza.<sup>91</sup> In 2013, the Gaza power plant shut down from lack of fuel entirely, with knock-on effects in shutting down water treatment and sewage plants. Fuel shortages from the blockade also limit Gazans ability to use private generators to access electricity.

The reverberating effects of lacking sufficient electricity over long periods of time are one of the most important factors hindering economic development and human security in Gaza, given the interconnectedness of the water, energy, agriculture, health, and other sectors.<sup>92</sup>

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<sup>89</sup> UN, *Gaza ten years later*, p. 21.

<sup>90</sup> Darryl Li and Yehezkel Lein, *Act of vengeance: Israel's bombing of the Gaza power plant and its effects* (Jerusalem: B'Tselem, 2006).

<sup>91</sup> Fares Akram, 'Gaza's economy suffers from Egyptian's military crackdown,' *New York Times*, July 24, 2013.

<sup>92</sup> Zeitoun and Talhami, 'The impact of explosive weapons on urban services'.

Adequate water delivery and purification services, as well as refrigeration and air conditioning, are all dependent on reliable supplies of electricity. Many Gazans in late 2017 had electricity only between four and six hours of power each day, followed by twelve hours of blackouts.<sup>93</sup>

Limited imports of fuel to Gaza led to court cases between human rights organizations and the Israeli government. The Israeli HCJ ruled in three decisions between 2007 and 2008 that Israel could cut fuel supplies from previously established levels to those providing only ‘essential humanitarian needs.’<sup>94</sup> Human rights organizations argued that such decisions amounted to an illegal collective punishment, violating IHL, and also overlooked the fact that energy is essential to a functioning economy and ordinary civilian livelihoods.<sup>95</sup>

In 2017, Gaza experienced another electricity crisis, which contributed to deteriorating living conditions in the territory. While the catalyst was a disagreement between the PA based in Ramallah and Hamas in Gaza over fuel taxation rates, an NGO representative noted that the ‘crisis was a decade in the making,’ owing to pervasive delays in access to reconstruction materials and inadequate investment in essential infrastructure.<sup>96</sup> Without adequate electricity, desalination plants and water and sewage facilities remain compromised; releases to the ocean of untreated or partially treated wastewater in Gaza increased from 90,000 CM per day in 2012 to 108,000 CM per day during the summer of 2017.<sup>97</sup> The inflow of wastewater into the sea restricted fishing and bathing along the Gaza coast, and affected, Israel’s drinking water supply, as the flow of sewage forced the Ashkelon desalination plant to close for several days.

### *The agriculture/fishing sector*

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<sup>93</sup> [http://gisha.org/UserFiles/File/publications/Electricity\\_FAQ/Electricity\\_FAQ\\_EN.pdf](http://gisha.org/UserFiles/File/publications/Electricity_FAQ/Electricity_FAQ_EN.pdf)

<sup>94</sup> Roy, *The Gaza Strip*, p. xxix.

<sup>95</sup> [https://reliefweb.int/sites/reliefweb.int/files/resources/3E73E59C141C3A62852573E100718E27-Full\\_Report.pdf](https://reliefweb.int/sites/reliefweb.int/files/resources/3E73E59C141C3A62852573E100718E27-Full_Report.pdf)

<sup>96</sup> Authors’ interview with Israeli human rights organization, 9 August 2017.

<sup>97</sup> UN, *Gaza ten years later*, p. 20.



Our database shows that the traditional agricultural sector in Gaza has consistently been hit hard since the blockade began in 2007. Prior to the siege, Gaza exported agricultural products to Israel and the West Bank; since then, most exports have been curtailed except for some small exports of flowers to Europe. Restrictions on the import of pesticides and irrigation parts have also contributed to the decline in the agriculture sector.<sup>98</sup> As in the West Bank, military operations have uprooted olive trees, as was the case in January 2008 in the Al Bureij Camp<sup>99</sup> and near Khan Younis in May 2008.<sup>100</sup> The Israeli military has also prevented farmers in Gaza from accessing arable land and wells near the Israel-Gaza border, unilaterally creating ‘no-go’ zones for civilians.<sup>101</sup> During conflicts with Hamas, the IDF has periodically deployed tanks and other tracked vehicles to destroy arable land by repeatedly compacting the soil; in the 2008-2009 conflict, almost one third of Gaza’s arable land was targeted in this manner (over 7,800 acres); according to Roy, by 2014, this land was still not restored to cultivation.<sup>102</sup>

Our data further highlights the ways in which the fishing industry has been increasingly targeted: nearly 70 per cent of the agricultural/fishing incidents for Gaza are related to actions taken to restrict access to productive fishing waters. Whereas the Oslo Accords obligates Israel to allow fishermen to go out 20 nautical miles from shore to fish, this has rarely been allowed. In 2006, the area was reduced to six nautical miles, but during periods of conflict, it is often further reduced, such as during the 2008-2009 conflict when it was reduced to three nautical miles.<sup>103</sup> Most of the fishing incidents entail confiscating fishing boats. Our data also shows that Egyptian naval forces also target Palestinian fishing boats, by patrolling the southern area of Gazan waters

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<sup>98</sup> B’Tselem, *Human rights in the occupied territories*: 2011 annual report (B’Tselem, 2011).

<sup>99</sup> [https://www.ochaopt.org/sites/default/files/Weekly\\_Briefing\\_Notes\\_241\\_English.pdf](https://www.ochaopt.org/sites/default/files/Weekly_Briefing_Notes_241_English.pdf)

<sup>100</sup> [https://www.ochaopt.org/sites/default/files/Weekly\\_Briefing\\_Notes\\_260\\_English.pdf](https://www.ochaopt.org/sites/default/files/Weekly_Briefing_Notes_260_English.pdf)

<sup>101</sup> B’Tselem, *Human rights in the occupied territories*; Ron J. Smith and Martin Isleem, ‘Farming the front line’, *City*, 2017.

<sup>102</sup> Roy, *The Gaza Strip*, p. 1.

<sup>103</sup> [https://www.btselem.org/gaza\\_strip/20170129\\_killing\\_the\\_fishing\\_sector](https://www.btselem.org/gaza_strip/20170129_killing_the_fishing_sector)

and sometimes firing on Palestinian fishing boats entering Egyptian waters.<sup>104</sup> Constraining Gazan fishing close to the shoreline rather than in more abundant offshore fisheries depletes shallow fishing grounds; between 2008 and 2011 alone, total fishing catch declined by 90 per cent.<sup>105</sup> The effects on livelihoods are profound: in 2000, 10,000 Gazan fishermen were registered, while as of 2017, only 4,000 registered fishermen were left, half of which were largely unemployed.<sup>106</sup>

### *Humanitarian aid and infrastructure in Gaza*

The economic and humanitarian impacts of targeting civilian infrastructure have not gone unnoticed by the international community, which has raised concerns about the protection of civilians and respect for IHL.<sup>107</sup> Periods of violent conflict between Hamas and Israel, combined with the sustained blockade, have created dire humanitarian need on a scale not previously experienced in Gaza.<sup>108</sup> Responding to the widespread devastation wreaked in 2014, the Israeli government, the UN, and the PNA established the Gaza Reconstruction Mechanism (GRM). The GRM was supposed to facilitate and track the entry of ‘dual-use’ materials (that is, goods with possible civilian and military purposes) into Gaza to facilitate reconstruction, especially for homes destroyed or damaged in the conflict.<sup>109</sup> Interviews with humanitarian actors and donors, however, consistently highlight how restrictions on the import of dual-use goods, including cement, rebar, and aggregate, have taken on a disproportionate role in limiting the rebuilding of infrastructure.

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<sup>104</sup> [https://www.ochaopt.org/sites/default/files/ocha\\_opt\\_protection\\_of\\_civilians\\_2010\\_05\\_21\\_english.pdf](https://www.ochaopt.org/sites/default/files/ocha_opt_protection_of_civilians_2010_05_21_english.pdf); See also Ron Smith, ‘Isolation through humanitarianism: subaltern geopolitics of the siege on Gaza’, *Antipode* 48: 3, 2016, pp. 750-769.

<sup>105</sup> Roy, *The Gaza Strip*, p. 1.

<sup>106</sup> [https://www.btselem.org/gaza\\_strip/20170129\\_killing\\_the\\_fishing\\_sector](https://www.btselem.org/gaza_strip/20170129_killing_the_fishing_sector)

<sup>107</sup> UN, *Gaza Ten Years Later*.

<sup>108</sup> Roy. *The Gaza Strip*.

<sup>109</sup> <https://grm.report>

Restrictions and delays on importing water pumps and electrical equipment has limited large-scale development projects vital to the energy, water, and health sectors. A representative from a humanitarian organization, for example, described the difficulty of importing water pipes, which delayed nearly 30 water and sanitation projects as of 2017.<sup>110</sup> EU staff also reported in interviews that if a particular type of material is rejected, then they are not allowed to submit a request for the same material again.<sup>111</sup>

The long chain of bureaucracy that humanitarian actors must navigate, even in spite of the GRM, not only hinders reconstruction, but further institutionalizes the blockade on Gaza.<sup>112</sup> Severe restrictions on the movement of people, according to the ICRC, also impedes investments in infrastructure and reconstruction.<sup>113</sup> Periods of reconstruction followed by destruction have hindered long-term recovery and investments in infrastructure despite donor conferences convened in Sharm El-Sheikh in 2009 and in Cairo in 2014. Instead, the lack of reconstruction of Gaza's infrastructure has contributed to increasing disparity in human welfare between Gaza and the West Bank. According to the UN, 'in terms of real GDP, the ten-year average growth rate for Gaza reached only 2.8% compared to 6.9% in the West Bank, causing a growing divergence between the two regions.'<sup>114</sup> A humanitarian organization representative described reconstruction during this protracted conflict as simply 'patching up a system that keeps getting worse'.<sup>115</sup>

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<sup>110</sup> Authors' interview with representative from a humanitarian organization, East Jerusalem, 8 Aug 2017.

<sup>111</sup> Authors' interview, East Jerusalem, 2 May 2017.

<sup>112</sup> Sultan Barakat and Firas Masri, *Still in ruins: reviving the stalled reconstruction of Gaza*. (Brookings Doha Center, Policy Briefing, Aug. 2017).

<sup>113</sup> Authors' interviews.

<sup>114</sup> UN, *Gaza ten years later*, p. 13.

<sup>115</sup> Authors' interview with representative from humanitarian assistance organization, East Jerusalem, 27 Apr. 2017.

## **Implications of targeting infrastructure under protracted conflict and prolonged occupation**

Although under IHL attacks on civilian infrastructure are prohibited, our data shows that the targeting of water, energy, and agriculture infrastructures has been common in the West Bank and Gaza Strip. Drawing upon an original database of infrastructure targeting in the West Bank and Gaza Strip, we demonstrate not only the prevalence of direct attacks on infrastructure but also ongoing incidents of slow violence. In doing so, we shed light on the different actors and institutions involved in the destruction of civilian infrastructures in the West Bank and Gaza Strip. While the data highlights variation in the targeting of infrastructure in the West Bank and the in Gaza Strip, restrictions on access, confiscation, and destruction of infrastructure has negatively affected human security in both places.

The humanitarian situation in the occupied Palestinian territories is often described as ‘unique among today’s crises’ owing to the prolonged nature of the humanitarian crisis in the midst of a protracted occupation made worse in Gaza by a protracted blockade.<sup>116</sup> Under these conditions, the line between emergency assistance and development assistance is increasingly blurred.<sup>117</sup> Humanitarian actors must focus on not only restoring water and energy infrastructures, but do so while planning for repeated targeting of these same infrastructures (as in Gaza) and in the face of formidable obstacles. These include legal structures of the occupation regime, such as Civilian Administration’s permitting process in Area C, as well as the activities of settlers targeting infrastructure in Area C of the West Bank. As one NGO noted, in the Palestinian territories, ‘infrastructure has been held hostage to the conflict’.<sup>118</sup>

Humanitarian actors in Gaza face a particularly difficult situation, as their operations may

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<sup>116</sup> OCHA, *Humanitarian needs overview 2018: occupied Palestinian territories* (OCHA: Nov. 2017).

<sup>117</sup> Authors’ interview with representative from humanitarian assistance organization, East Jerusalem, 27 Apr. 2017.

<sup>118</sup> Authors’ interview with environmental NGO, Tel Aviv, 26 Apr. 2017.

contribute to normalizing the blockade and entrenching the GRM. While the US and other countries have deemed Hamas a ‘terrorist’ organization, humanitarian actors abide by IHL norms of impartiality, providing aid and assistance to all parties in conflict. This gives the ICRC, for instance, an important role in facilitating relief and reconstruction operations. Because the Israeli government refuses to coordinate reconstruction efforts with the Hamas leadership in Gaza, the ICRC coordinates with the Israeli authorities to bring in supplies and chaperone local staff to carry out repairs. Thus, international humanitarian actors argue that in their absence, the blockade would remain and conditions in the Gaza Strip would deteriorate further. However, continuous engagement in reconstruction and emergency relief has not stopped further de-development of the Gaza Strip, nor reduced dependence upon humanitarian aid.<sup>119</sup>

While Gaza remains in a protracted humanitarian crisis, the West Bank has also seen standards of living decline significantly since the Oslo Accords. However, this decline has been less precipitous than in Gaza, and thus the physical and economic separation of the Gaza Strip from the West Bank has continued to deepen. This gulf in accessing basic services and sustaining livelihoods is reflected in Palestinian public opinion polls. A March 2018 public opinion poll conducted by the Palestinian Center for Policy and Survey Research found that of the 1,200 adults sampled, a mere 5 per cent of Palestinians in Gaza reported a positive evaluation of conditions there, compared to 20 per cent of Palestinians in the West Bank. Forty-five per cent of Palestinians in Gaza indicated that they wanted to emigrate in contrast to 19 per cent of those living in the West Bank.<sup>120</sup>

In both the West Bank and Gaza Strip, we have found that Israeli control over infrastructure, construction, land use, and movement undermines civilian welfare even as these effects are ‘walled off’—literally and in public discourse-- from the Israeli public and

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<sup>119</sup> Le More, ‘Killing with kindness’; Roy, *The Gaza Strip*.

<sup>120</sup> <http://www.pcpsr.org/en/node/725>.

increasingly, from the international community. Our findings show how the systematic targeting of water, energy and agriculture sectors is an important feature of the evolving ‘occupation regime’ that directly undermines the ability of Palestinians to stay in place. Direct and indirect forms of targeting have persisted and intensified in the time period under consideration, helping to create a humanitarian crisis in Gaza and a fragmented, donor-dependent series of encircled enclaves in the West Bank. Targeting infrastructures that support water and energy supplies, and undermine agricultural and fishing livelihoods, has increasingly made Palestinian places less habitable and Palestinian civilian life increasingly precarious.<sup>121</sup>

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<sup>121</sup> UN, *Gaza in 2020: A livable place?*, Aug. 2012.