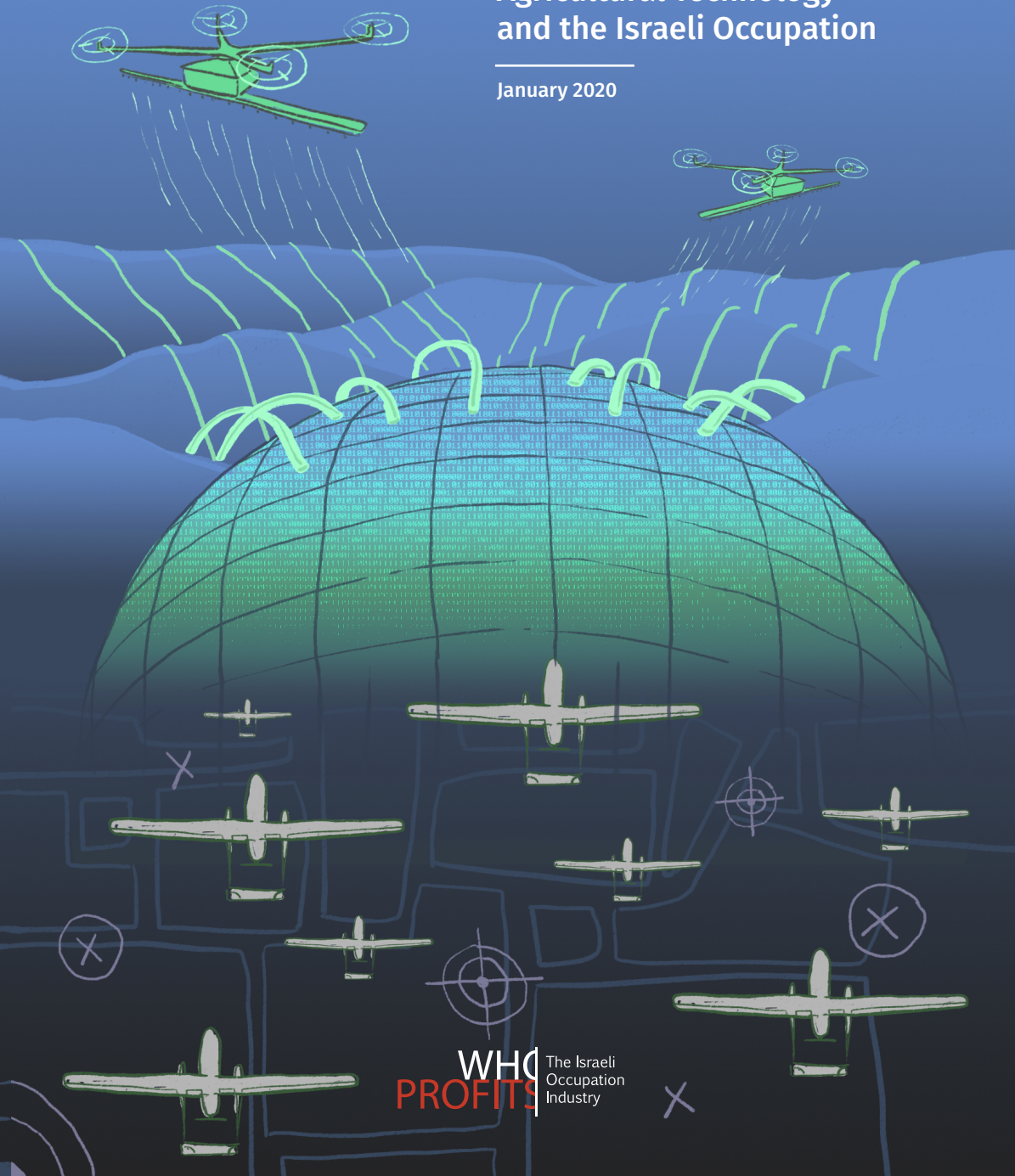


Agribusiness as Usual

Agricultural Technology
and the Israeli Occupation

January 2020



WHY
PROFITS The Israeli
Occupation Industry

Agribusiness as Usual

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and the Israeli Occupation

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Who Profits from the Occupation is a research center dedicated to exposing the commercial involvement of Israeli and international companies in the continued Israeli control over Palestinian and Syrian land. Who Profits operates an online database, which includes information concerning companies that are commercially complicit in the occupation. In addition, the center publishes in-depth reports and flash reports about industries, projects and specific companies. Who Profits also serves as an information center for queries regarding corporate involvement in the occupation. In this capacity, Who Profits assists individuals and civil society organizations working to end the Israeli occupation and to promote international law, corporate social responsibility, social justice and labor rights.

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Methodology

This report is based on both desk and field research. The desk research includes the collection and analysis of information published in various public sources, such as company records and publications, as well as newspapers and other media sources. It also made use of documents of the Israeli Registrar of Companies and publications by various state authorities (including Israeli government ministries). The field research consisted of a visit to agricultural settlements in the Jordan Valley in the occupied West Bank in June 2019.

Prior to publication, Who Profits contacted all the companies profiled in this report and requested their comments and responses. As of the date of publication, no responses have been received. The sources for all corporate information presented are on file with Who Profits.

Executive Summary

Irrigating fields, protecting crops and providing technical support to farmers are generally regarded as benign, even positive, activities. Yet as this report demonstrates, in the context of Israel's prolonged military occupation of Palestinian and Syrian territory, such activities acquire a regressive political character and become implicated in structures of repression, land grab and rights violations.

Unlike agriculture, which physically appropriates land and resources, agricultural technology (agritech) forms a largely invisible layer in the ongoing process of dispossession through agricultural land grab in the occupied West Bank and Syrian Golan. Rarely discernible to the naked eye, irrigation pipes, fertilizers and herbicides and agronomic technical assistance nonetheless play a crucial part in sustaining illegal settlement agriculture.

Moreover, while the use of the occupied Palestinian territory and its captive population as a laboratory for military and crowd control technologies is well documented, this report demonstrates that the framework of occupation also provides the civilian agritech sector with a testing ground for the development of products and technologies.

Through their participation in agricultural experiments conducted by settlement Research and Development (R&D) centers, major agritech corporations such as Israel Chemicals and Netafim are able to use occupied land as a laboratory for the testing of products.

Furthermore, Israeli and international agritech firms increasingly collaborate with Israeli military and security corporations to extend the

commercialization of occupation-generated know-how well beyond the purview of security markets. Collaborations include the adaptation of the Iron Dome command and control system for smart irrigation as well as the use of Israel Aerospace Industries (IAI) military drones for large scale precision agriculture. Such partnerships enable Israeli military corporations to penetrate new markets while positioning a sanitized version of their repressive technologies, developed in the context of a prolonged military occupation, as part of the effort to combat the global crises of climate change and food insecurity.

This report will examine the Israeli agritech industry and R&D activity in occupied territory and expose the complicity of Israeli and international corporations in settlement agricultural production. It will also present the use of herbicide spraying against Palestinian farmers in the besieged Gaza Strip. Finally, it will investigate commercial agritech applications of military technology, focusing on four recent case studies.

Introduction

Israeli agritech corporations increasingly position themselves as global innovators responding to the pressing challenges of climate change and food insecurity. These companies develop and market smart irrigation systems, crop protection solutions and specialty fertilizers to farmers across the world, raking in billions of dollars in annual sales, while enjoying a positive 'green' image.

In this report, Who Profits shows that Israeli agritech companies are deeply complicit in the ongoing occupation of Palestinian and Syrian land. The report exposes the contribution of agritech firms to agriculture in illegal settlements and examines their role in the Israeli blockade of Gaza. It investigates the reciprocal ties that exist between the Israeli agritech and military industries and highlights the economic gains made by Israeli agritech industries through their collaboration with the Israeli military apparatus.

The first section focuses on Israeli agritech and the settlement enterprise. It provides an overview of the industry and of the R&D that takes place in the West Bank and Syrian Golan. The second part of the report shows corporate involvement in the use of herbicide against Palestinian farmers in Gaza. The final section presents four case studies which involve commercial agritech applications of military technology.

Israeli agritech companies actively contribute to illegal settlement agriculture on occupied Palestinian and Syrian land through the provision of equipment, products and consulting services. Companies like NaanDan Jain Irrigation, owned by the Indian public corporation Jain Irrigation, and Rivulis, a leading private provider of irrigation solutions,

carry out projects, manage local distribution and provide on-site visits to settlements in the Jordan Valley, West Bank and in the Syrian Golan. Moreover, major agritech corporations, including Israel Chemicals (ICL Group), Netafim, Haifa Chemicals (Haifa Group) and Adama, participate in agricultural experiments conducted by R&D centers in the West Bank and the Golan, testing their products on occupied land and enhancing the capabilities of illegal settler growers.

Israel's leading agricultural research organizations similarly collaborate with settlement R&D centers and academic institutions. The Israeli Ministry of Agriculture and Ministry of Science and Technology support several R&D centers in the occupied West Bank and Syrian Golan, the latter ministry going as far as to offer 'Boycott grants' (special financial assistance for settlement based research whose illegality renders it ineligible for international grants).

This report shows that Israeli agritech firms benefit from the commercialization of Israeli military knowledge, developed in the context of a prolonged military occupation. Partnerships between leading Israeli and international agritech corporations and major Israeli military and security companies such as Elbit Systems, Israel Aerospace Industries (IAI) and mPrest Systems have become a trend in recent years. Such collaboration extends the symbiotic relationship between the private sector and the state military apparatus into civilian arenas such as smart agriculture. This enables military contractors to penetrate civilian markets and further capitalize on their occupation-generated military know-how, whilst whitewashing repressive technologies as agritech. In turn, many companies that specialize in irrigation technology or crop protection become implicated in the state military apparatus.

Agritech in Occupied Territory

The Israeli Agritech Industry

Historically, the agritech sector has been politically and economically significant for the Israeli state. Technologies such as drip irrigation and water recycling and desalination were touted as Israeli inventions and marketed worldwide, while Israeli agritech expertise played a role in facilitating diplomatic relations in the Global South.¹ This served to boost Israel's international reputation, deflecting attention from the continual theft of Palestinian and Syrian water resources.²

In recent years, the Israeli agritech market has experienced rapid growth in both the number of agritech firms and the investment in them. In 2015, there were 280 agritech companies registered in Israel, active in fields such as irrigation, precision agriculture, fertilizers and pesticides, post-harvest and livestock technologies. 200 of these Israeli companies were active in the exportation of agritech products and services, with annual investment standing at 90 million USD.³ By 2017, the number of Israeli

-
- 1 See for example Cutipa-Zorn, Gavriel (2019). Israel, Guatemala, and the agricultural roots of an authoritarian internationalism. *Cultural Dynamics*, 31(4), 350-364.
 - 2 As early as the 1930s, claims of Zionist technological superiority over indigenous agricultural production were utilized to counter Palestinian and British claims that Zionist land acquisition was negatively impacting the largely agrarian Palestinian society. This took the form of debates over Mandatory Palestine's 'absorptive capacity,' which Zionist leaders argued could be increased through the use of modern agricultural technologies. See LeVine, Mark (1995). The discourses of development in Mandate Palestine. *Arab studies quarterly*, 95-124.
 - 3 Ben-Zoor, Dalit and Priampolsky, Maxim. (2015) [The Israeli Agritech Sector](http://bit.ly/328h7o8). Finance Division, Economics Department, Leumi Bank. <http://bit.ly/328h7o8>

agritech companies nearly doubled, approaching 500, and estimated investment reached 190 million USD.⁴

Investment in Israeli agritech includes both private and governmental investment. Between 2014 and 2017, there were 120 investors in Israeli agritech. These included 15 Special Purpose agritech funds, angel investors, shareholders, hedge funds, government grants and crowdfunding.⁵ Government support is granted through the assistance program of the Israeli Innovation Authority and Ministry of Agriculture designated support tracks.⁶



Irrigation technologies serve illegal Israeli settlements | Jordan Valley, West Bank | Photo by Who Profits | 18 June 2019

Agritech is a lucrative market, with Israeli agritech exports generating a total of 5,993 million USD in revenue in 2018. This figure marks a 4% increase from the previous year. Fertilizers, other chemicals and irrigation products accounted for 44%, 24% and 13% of all Israeli agritech exports respectively. The European Union imported 30% of Israeli agritech exports followed by Asia (22%), South and Central America (20%) and the United States (18%).⁷

4 Shvadron, Dror. [Israeli Agri-tech and Indian. Agricultural Challenges: Recommendations for an Updated Governmental Policy](http://bit.ly/31bkdq2) (Hebrew). *Milken Innovation Center*, September 2018. <http://bit.ly/31bkdq2>

5 Ibid

6 Asif, Sharon (Sheri). [Agri-Technology \(agritech\) in Israel-Barriers and Opportunities](http://bit.ly/2B7tIMq) (Hebrew). *Milken Innovation Center*, September 2016. <http://bit.ly/2B7tIMq>

7 [Agrotechnology and Water: 2018 Review](http://bit.ly/2lJmiDr) (Hebrew). *Israel Export Institute*. <http://bit.ly/2lJmiDr>

Between 2015 and 2018, agritech exports to the European Union, Asia, the United States and South America rose by 6%, 12%, 14% and 59% respectively. Excluding fertilizers and chemicals, exports to the European Union, Asia, the United States and South America rose by 15%, 10%, 28% and 27% respectively.⁸ The Israeli irrigation industry exports 80% of its products, which represent 30% of the global drip irrigation market.⁹

R&D and the Settlement Enterprise

The Israeli government boasts that the majority of Israeli agricultural research institutes maintain close ties to the Food and Agriculture Organization (FAO) of the United Nations, thus “ensuring a continuous exchange of information with other countries.”¹⁰ Yet the same Israeli R&D institutions maintain far closer ties to the Israeli settlement enterprise, considered illegal under international law.¹¹ The Israeli government recognizes the centrality of R&D to the development of agricultural technologies and has been investing in and subsidizing agritech research conducted by business and academic institutions alike, within and beyond the Green Line.

In February 2010, the Israeli Knesset passed Government Decision No. 1417 – The Encouragement of Agricultural Research and Development in the Framework of Regional-Applied R&D Centers. This decision allocated 15 million NIS annually for R&D activities from the budget of various government ministries, including the Ministry of Agriculture; the Ministry for the Development of the Periphery, the Negev and the Galilee; the Ministry of Regional Cooperation and the Settlement Division of the

8 Ibid

9 Ben-Zoor, Dalit and Priampolsky, Maxim. [The Israeli Agritech Sector](http://bit.ly/328h7o8). Finance Division, Economics Department, Leumi Bank, 2015. <http://bit.ly/328h7o8>

10 [SCIENCE: Agricultural R&D](http://bit.ly/2MxIkdm). Embassy of Israel in Ghana. <http://bit.ly/2MxIkdm>

11 According to Article 49 of the Fourth Geneva Convention: “The Occupying Power shall not deport or transfer parts of its own civilian population into the territory it occupies.” The international community views Article 49 as applicable to the West Bank (including East Jerusalem), Gaza Strip and the Syrian Golan.

World Zionist Organization.¹² In 2015, the Chief Scientist at the Israeli Ministry of Economy launched a joint plan with the Israeli Ministry of Agriculture to offer financial subsidies of up to 50% for approved R&D expenses for agritech and agricultural equipment development.¹³ The program is intended to incentivize private Israeli agritech firms, enhance their international competitiveness and enable them to penetrate new markets. Most recently, in February 2019, the Ministry of Agriculture and the Israel Innovation Authority renewed their support track for agritech companies with an annual budget of 20 million NIS. This support track includes grants for R&D, regional R&D cooperation and overseas pilots.¹⁴

Israeli agricultural research bodies on both sides of the Green Line are regularly involved in research projects on occupied land. There is regular collaboration on research between settlement R&D centers and two of Israel's largest and most significant producers of agritech research – the Agricultural Research Organization (ARO) at the Volcani Center¹⁵ and the Hebrew University of Jerusalem.¹⁶ Other Israeli universities, such as the Haifa-based Technion – Israel's Institute of Technology, likewise partake in such collaboration.¹⁷

A 2016 research project on off-season raspberry cultivation led by

12 [Government Decision No. 1417: The Encouragement of Agricultural Research and Development in the Framework of Regional-Applied R&D \(Research and Development\) Centers](#) (Hebrew). Prime Minister's Office, *gov.il*, 21 February 2010, updated 18 September 2017. <http://bit.ly/33mODas>

13 [Israel's Chief Scientist: A new plan for agricultural R&D](#). Chief Scientist, Spokesperson and Public Relations, Ministry of Economy and Industry, 29 April 2015. <http://bit.ly/33rx0X7>

14 Kablonko, Yasmin. [Israeli gov't to invest NIS 20m in agritech this year](#). *Globes*, 5 February 2019. <http://bit.ly/2Vzb9tY>

15 Volcani Center, the research arm of the Ministry of Agriculture and Rural Development, is the largest agricultural research organization in Israel, employing over 500 researchers and graduate students and producing 70% of Israeli agricultural research. Shvadron, Dror (2018). [Israeli Agri-tech and Indian. Agricultural Challenges: Recommendations for an Updated Governmental Policy](#). *Milken Innovation Center*, September 2018. <http://bit.ly/31bkdq2>

16 The Rehovot campus of the Hebrew University of Jerusalem offers the only academic program in agriculture in Israel.

17 For example, in 2017-2018, the Technion, together with the Ministry of Agriculture and MIGAL Galilee Research Institute, participated in a research project on sensors-based smart irrigation with the settlement-based Shomron and Jordan Valley Regional R&D. On file with Who Profits.

a researcher at the Volcani Center's Institute of Plant Sciences was supported by two R&D centers located in illegal settlements; Regional Shomron and Jordan Valley R&D, and Central Mountain (Mt. Hebron) R&D. Moreover, the research itself was carried out in plots in the West Bank and the Syrian Golan.¹⁸ A 2019 conference at the university of Ariel (an illegal settlement) showcased recent research on medical marijuana and on precision irrigation models based on quantifying water consumption in wine grapes. The research presented was the product of collaboration between the Hebrew University, Ariel's R&D Center and Regional R&D East: Judea and Samaria and the Jordan Valley.¹⁹



Israeli irrigation pipes serving illegal settlements | Jordan Valley, West Bank | Photo by Who Profits | 18 October 2017

In addition, there are several regional R&D centers operating under the auspices of the Ministry of Agriculture and the Ministry of Science and Technology, both within and beyond the Green Line. The former supports

18 [Raspberries: The Flavor and the Health](http://bit.ly/20FVbNf) (Hebrew). Ministry of Agriculture, 11 July 2016. <http://bit.ly/20FVbNf>

19 [The 29th Conference: Judea and Samaria Research: A Scientific Interdisciplinary Conference](http://bit.ly/31eqDVL) (Hebrew). Ariel University, June 2019. <http://bit.ly/31eqDVL>

eight “peripheral”²⁰ R&D centers, two of which are located in the West Bank and one of which encompasses the Syrian Golan (see Fig. 1). The latter operates six regional R&D Centers, two of which are located on occupied land and one of which includes the regional council of a settlement (see Fig. 1).²¹ In 2016, its support for regional R&D centers amounted to 40 million NIS.²² The Ministry of Science and Technology also supports the Samaria and Jordan Rift Regional R&D Center, academically regulated by Ariel University, located in the settlement of Ariel in the West Bank.²³

Since 2011, the Ministry for Science and Technology has been issuing annual calls for bids for research proposals specifically for R&D centers located in the West Bank and Syrian Golan. Originally referred to as ‘Boycott grants’ by then Science and Technology Minister Daniel Hershkowitz,²⁴ the grants aim to compensate settlement research institutions for their ineligibility for international grants due to their location on occupied land.²⁵ The overall amount allocated to the bid in 2019 was 3.9 million NIS.²⁶

20 The Israeli designation of social and geographic ‘periphery’ does not recognize the Green Line, with many settlements in the Syrian Golan and the West Bank eligible for benefits through their designation as National Priority Areas.

21 Getz, Daphne et al. [Promoting R&D and Innovation in the Israeli Periphery](#) (Hebrew). Samuel Neaman Institute for National Policy Research, December 2015. <http://bit.ly/31a68Jq>

22 [Regional Research and Development Centers - Ministry of Science and Technology](#) (Hebrew). Ministry of Science and Technology, 27 June 2018. <http://bit.ly/2OCvttb>

23 [Samaria and Jordan Rift R&D Center](#). Ariel University. <http://bit.ly/2B4Ajav>

24 Pyutrekovsky, Shlomo. [Hershkowitz allocates ‘boycott grants’ to boycotted researchers](#) (Hebrew). Israel National News, 13 January 2011. <http://bit.ly/35vjGCI>

25 [Call for bids for submission of research proposals in regional R&D centers that are ineligible for applications for international research grants for 2019](#). Ministry of Science and Technology, 4 July 2019. <http://bit.ly/2nJrPTE>

26 Ibid

Fig. 1. Settlement and Settlement-affiliated R&D Centers

	Jordan Valley R&D	Central Mountain R&D	Northern Agriculture R&D	Yehuda R&D	Samaria and Jordan Rift R&D	Shamir Research Institute	Dead Sea and Arava Science Center
Location	Jordan Valley, West Bank	Mt. Hebron, West Bank	Kiryat Shmona, Israel	Carmel, West Bank	Ariel, West Bank	Katzrin, Syrian Golan	Neve Zohar, Israel
Partnering settlement councils	Megilot, Jordan Valley	Binyamin, Gush Ezion, Shomron, Mt. Hebron	Golan	Efrat, Gush Ezion, Kiryat Arba, Mt. Hebron	---	Katzrin, Golan	Megilot
Supporting Government Ministry	Ministry of Agriculture	Ministry of Agriculture	Ministry of Agriculture	Ministry of Science and Technology	Ministry of Science and Technology	Ministry of Science and Technology	Ministry of Science and Technology
Academic Sponsorship	---	---	---	Ben Gurion University	Ariel University	Haifa University	Ben Gurion University
Website	www.mop-bika.org.il	www.mop-mophahar.org.il	www.mop-zafon.org.il	---	www.ariel.ac.il/research/samaria-jordan-rift/	http://sri.haifa.ac.il/	www.adssc.org

Agricultural Production in Occupied Territory

The 1967 military occupation of Palestinian and Syrian territory brought the highly fertile, resource-rich regions of the Jordan Valley and the Syrian Golan under direct Israeli military and civil control. Since then, both regions have been used for Israeli agricultural production, thus facilitating extensive land grab and resulting in the dispossession and displacement of occupied populations while generating enormous profits for the occupying economy.

The occupied Jordan Valley, situated in the eastern part of the West Bank and accounting for some 28.5% of its territory, is the main agricultural region in the occupied Palestinian territory. It has a favorable climate, fertile land and a plentiful water supply. Immediately after the occupation of the area in 1967, Major General Uzi Narkis issued two military orders: Order 150, which regulated “absentee properties”²⁷ in the Jordan Valley; and Order 151, which declared much of the Jordan Valley as a closed military zone, preventing “absentee Palestinian landowners,” even when present, from reaching their lands.²⁸ To this day, these lands are a closed military zone. During the 1980s, the State of Israel transferred ownership of these seized lands to the World Zionist Organization, which leased them to settlers living in the Jordan Valley for the purpose of agricultural cultivation.²⁹

27 The term absentee refers to Palestinians deported or otherwise displaced during the 1967 War. For more on the seizure of refugee properties following the 1948 Palestinian Nakba see Who Profits’ 2019 update [Profiting Through Dispossession: Another Side of Airbnb’s Complicity](#). November 2019.

28 Israeli military order no. 150 and no. 151: 1967. On file with Who Profits.

29 Who Profits, [Greenwashing the Occupation: The Solar Energy Industry and the Israeli Occupation](#). February 2017. <http://bit.ly/2SFCcVb>

Though small in terms of population, Israeli settlements in the Jordan Valley, the majority of which are agricultural cooperative settlements (moshavim and kibbutzim), control 86% of the land.³⁰ Settlements in the Jordan Valley and the Dead Sea region are considered National Priority Areas (NPAs) by the Israeli government and thus eligible for extensive government benefits.³¹ A conservative estimate by the World Bank proposed that the value of settlement agricultural production in the occupied Jordan Valley was 251 million USD in 2013.³² The settlements provide most of the pomegranates, 22% of the almonds and 12.9% of the olives exported to Europe and Russia, and 40% of all exported dates.³³ As previously documented by Who Profits, settlement produce is often mislabeled as “Product of Israel,” a practice that violates many countries’ national consumer protection laws.³⁴

The development of agricultural production in the settlements directly contributes to the de-development of Palestinian agriculture in a number of ways. Firstly, intensive agricultural production in illegal Israeli settlements makes use of water and other natural resources from occupied Palestinian land.³⁵ For example, the cost of the extraction of water from an aquifer located entirely within the West Bank is subsidized by Israel.³⁶ Moreover, Israel’s severe restrictions on the free movement of people and goods, prevents Palestinian producers from cultivating their lands, which have historically been a major source of income. This forces many Palestinians to seek employment in settlement agriculture, often under deeply exploitative conditions. Palestinian women and children are especially vulnerable to exploitation in settlement agricultural

30 Who Profits, [Made in Israel: Agricultural Exports from Occupied Territories](#). April 2014. <http://bit.ly/2QzxDcs>

31 [Government Decision No. 2228: National Priority Areas](#). (Hebrew). Prime Minister’s Office, *gov.il*, 14 July 2002. <http://bit.ly/2XzIFBI>. See also Who Profits report, *Industrial Zones in the Occupied Palestinian Territory* which describes the functioning of NPAs.

32 World Bank, [West Bank and Gaza: Area C and the Future of the Palestinian Economy](#), Report No. AUS2922, 2 October 2013. <http://bit.ly/32cdAoL>

33 Ibid

34 Who Profits, [Made in Israel: Agricultural Exports from Occupied Territories](#). April 2014. <http://bit.ly/2QzxDcs>

35 Ibid.

36 Human Rights Watch, [OCCUPATION, INC. How Settlement Businesses Contribute to Israel’s Violations of Palestinian Rights](#). January 2016. <http://bit.ly/2M7vh3j>

production.³⁷ Human Rights Watch has documented rights abuses against Palestinian children as young as 11 in the Israeli settlement agricultural industry, including exploitative wages and hazardous conditions due to pesticides, dangerous equipment and extreme heat.³⁸

In the occupied Syrian Golan, settlement agricultural production also contributes to land grab, de-development of the local Syrian economy and entrenchment of Israel's unilateral annexation of the territory. Following the Israeli occupation of the Golan in 1967, 95% of the Syrian population was forcibly expelled, and 340 towns and villages were completely destroyed.³⁹ At present, over 25,000 Syrians⁴⁰ live in five towns, Majdal Shams, Buqatha, Ein Qenia, Ghajar and Masaada, which constitute around 5% of the Golan. The remaining 95% is taken up by Israeli settlements and authorities and the Israeli military.⁴¹

Abundant in water resources and fecund lands, the Golan has been a major target of the illegal exploitation of natural resources by Israeli agricultural production. The Syrian Golan is referred to as the "fruit granary of the State of Israel" by the Israeli Ministry of Agriculture. It is a leading region for Israeli deciduous fruits (including apples, pears, cherries, avocados and kiwis). With Israel's largest grazing lands being located there, the Golan is also the hub of beef production.⁴²

One-third of the water in the Sea of Galilee, Israel's main source of

37 *Bloody Basil*, a 2018 documentary by the Palestinian research organization Al-Marsad (The Social and Economic Policies Monitor), documented the labor rights violations experienced by Palestinian women in settlement agriculture. <http://bit.ly/2ODE2nv>

38 Human Rights Watch, [Ripe for Abuse: Palestinian Child Labor in Israeli Agricultural Settlements in the West Bank](http://bit.ly/2MaqcHK). April 2015. <http://bit.ly/2MaqcHK>

39 Al-Marsad Arab Human Rights Center in Golan Heights, [Forgotten Occupation- Life in the Syrian Golan after 50 Years of Israeli Occupation](http://bit.ly/32bv58X). March 2018. <http://bit.ly/32bv58X>

40 Human Rights Council, [Israeli settlements in the Occupied Palestinian Territory, including East Jerusalem, and in the occupied Syrian Golan](http://bit.ly/2ZopiiRH). Report of the United Nations High Commissioner for Human Rights. A/HRC/40/42. 30 January 2019. <http://bit.ly/2ZopiiRH>

41 Ibid

42 [Call for Bids Food Tech](http://bit.ly/33qtDzw). (Hebrew). Ministry of Agriculture & Rural Development, Chief Scientist Office, 7 November 2016. <http://bit.ly/33qtDzw>

water, originates in the Golan.⁴³ The Office of the United Nations High Commissioner for Human Rights noted that Israeli settlements in the Golan are incentivized by a disproportionate allocation of water resources for agricultural production, which contributes to a higher agricultural yield for settlers choosing to move to the area.⁴⁴ By contrast, Syrian farmers are discriminated against. It is estimated that they pay up to four times more than their Israeli counterparts for water.⁴⁵ Historically, Israeli authorities have cited Syrian agriculture’s “primitive” use of water as a justification for prohibiting the expansion of Syrian irrigation schemes to new orchards.⁴⁶



Exploitative labor conditions in settlement agriculture | Ma’ale Afrayim settlement, Jordan Valley, West Bank | Photo by Activestills | 21 March 2009

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- 43 [Golan Heights](#). Ministry of Foreign Affairs. Accessed 15 January 2019. <http://bit.ly/2Mba4FR>
- 44 Human Rights Council, [Israeli settlements in the Occupied Palestinian Territory, including East Jerusalem, and the occupied Syrian Golan](#). Report of the Secretary-General. A/HRC/34/39. 16 March 2017. <http://bit.ly/2OGWBXT>
- 45 Al-Marsad Arab Human Rights Center in Golan Heights, [Human Rights Violations Committed by the State of Israel in the Occupied Syrian Golan](#). Submission to the United Nations Universal Periodic Review of The State of Israel, Twenty-Ninth Session of the UPR Human Rights Council, January-February 2018. <http://bit.ly/2nExARZ>
- 46 Mason, Michael, & Dajani, Muna (2019). A political ontology of land: Rooting Syrian identity in the Occupied Golan Heights. *Antipode*, 51(1), 187-206.

In the Gaza Strip, the ongoing Israeli siege, in place since 2007, and routine military assaults by Israeli air and ground forces, have largely decimated local agricultural production, which was formerly a key source of livelihood for Gaza's inhabitants.⁴⁷ The so-called 'buffer zone' on the Palestinian side of the border, brutally enforced and continually expanded by the Israeli military, encompasses much of Gaza's agricultural land. Palestinian farmers are barred from accessing these lands, with live fire used by the Israeli military to enforce this prohibition.⁴⁸

The Commercial Involvement of Agritech Companies

The agricultural sector is a key sector of the Israeli economy, and both the Israeli government and private growers are continually striving to raise agricultural yields. Smart agriculture solutions and other agritech inputs, such as fertilizers, pesticides and monitoring technologies, emerge to meet the demand for greater productivity.

Through the provision of equipment, products and consulting services to agricultural settlements in the West Bank and the Syrian Golan, agritech companies are complicit in the illegal Israeli settlement enterprise. Moreover, by taking part in agricultural experiments carried out on occupied land and in partnership with settlement R&D centers, companies actively contribute to the expansion of illegal agricultural production by settlers and to the normalization of land grab and dispossession.

The companies profiled herein include some of the largest agritech players in the Israeli market, such as Haifa Chemicals, Rivulis and Israel

47 United Nations, [Gaza Ten Years Later. United Nations Country Team in the occupied Palestinian territory](http://bit.ly/2INCAeC). July 2017. <http://bit.ly/2INCAeC>

48 Al Mezan Center for Human Rights, [Briefing Paper: Effects of Aerial Spraying on Farmlands in the Gaza Strip](http://bit.ly/33mFyyv). February 2018. <http://bit.ly/33mFyyv>

Chemicals (ICL Group), as well as more specialized ones. Two additional corporations, Netafim and Adama, are also active in occupied territory, but are profiled in the third section of this report due to their collaborations with Israeli military companies. Both companies have been acquired by publicly traded multinationals in 2017. Netafim was acquired by the Mexican chemical and industrial conglomerate Mexichem and Adama by the Chinese state-owned chemical corporation China National Chemical Corporation, commonly known as ChemChina. NaanDan Jain Irrigation, founded through a merger between the factories of two Israeli Kibbutzim, was likewise acquired by the publicly traded Indian irrigation conglomerate Jain Irrigation Systems in 2007.

Company Profiles

Deshen Hatzafon

Profile: An Israeli agricultural cooperative that manufactures and markets fertilizers.

One of the seven cooperatives that own Deshen Hatzafon is the Upper Galilee Farming Estates Central Agricultural Cooperative Society (Hebrew: Mishkei Hagalil Haelyon), which includes the settlements of Odem, Ortal, El Rom, Merom Golan and Ein Zivan in the occupied Syrian Golan.

The company employs regional experts in occupied territory, one for the Jordan Valley and the Syrian Golan, and one for Jerusalem and the West Bank.

In June 2019, Who Profits recorded the presence of company fertilizer tanks in the packing houses complex of the settlement of Mehola in the Jordan Valley.

Revenue: 60.489 million NIS in 2018

Traded: Cooperative

Ownership: Owned by 7 cooperative organizations that represent 260 Israeli kibbutzim.

CEO: Golan Argeman

Head office: Shean Regional Enterprises, Beit Shean Valley 1082000, Israel

Tel: +972-4-3731230

Website: www.sheffa.deshen.org



Deshen Hatzafon and ICL Group fertilizer tanks | Mehola settlement, Jordan Valley, West Bank | Photo by Who Profits | 18 June 2019



Deshen Hatzafon fertilizer tanks | Mehola settlement, Jordan Valley, West Bank | Photo by Who Profits | 18 June 2019

Gadot Agro (Merhav Agro)

Profile: A private Israeli company that imports, distributes, develops, manufactures, and exports crop protection products, biotechnology solutions, and specialized seeds.

In June 2019, Who Profits recorded the presence of company products near the settlement of Beit Ha'arava in the Jordan Valley, occupied West Bank.

The company's products were used in an agricultural experiment conducted by the Jordan Valley R&D Center in 2015-2016, taking place in Tomer settlement.

The company's products were also used in an agricultural experiment conducted by the Institute for the Study of the Golan at the University of Haifa's Katzrin campus in the occupied Syrian Golan in 2013.

The company employs field personnel in the Syrian Golan and the Jordan Valley, as well as in Palestinian Authority-controlled areas of the West Bank.



Gadot Agro (Merhav Agro) products | Jordan Valley, West Bank |
Photo by Who Profits | 18 June 2019

Revenue: 125 million NIS in 2018

Traded: Private

Ownership: Fully owned by the Israeli private equity fund Tene Investment in Gadot LP.

Investors in Tene include the Israeli insurance companies Menora Mivtachim Group, Harel Insurance Investments and Financial Services Ltd and Migdal Insurance and Financial Holdings Ltd.

Subsidiaries: Agrofim Global

Partners: The company is the Israeli representative of the following international companies: FMC, Corteva, Bayer Crop Science, Syngenta, Fine Chemtura Agrosolutions, Arysta and LifeScience
Local distributors: Amir Marketing and Investment in Agriculture, Hamashbir Agriculture, Makalde

Head office: Gadot Agro Complex, POB 555, 7079500 Kidron, Israel

Tel: +972-8-6308000

Website: www.gadotagro.com

Global presence: Central and Eastern Europe

Gat Fertilizers

Profile: A private Israeli company specializing in the manufacturing and marketing of fertilizers.

In June 2019, Who Profits recorded the presence of company products near the settlement of Beit Ha'arava in the Jordan Valley, occupied West Bank.

The company employs agronomists to serve its clients in the Jordan Valley and the Syrian Golan.



Gat Fertilizers fertilizer tank | Beit Ha'arava settlement, Jordan Valley, West Bank | Photo by Who Profits | 18 June 2019

Revenue: 64 million NIS in 2018

Traded: Private

Ownership: Company shares are held by Federman & Sons (Holdings) Ltd (92.5%) and Gat Fertilizers (7.5%).

Subsidiaries: Gat Fertilizadores (Spain)

Head office: 12 Abba Hillel Silver Rd, Ramat Gan 52506, Israel

Tel: + 972-8-6811050

Website: www.gatfertilizers.com

Global presence: Spain

Haifa Chemicals (Haifa Group)

Profile: A private Israeli multinational supplier of specialty fertilizers, including agricultural and industrial grade potassium nitrate.

The company provides fertilizers and consulting services to growers in settlements in the Jordan Valley in the occupied West Bank.

The company's poly-feed fertilizer has been used by grape growers in settler vineyards in the Jordan Valley, including in the settlement of Petza'el.

The company's January 2014 newsletter featured the [Jordan River Herbs](#) company based in Mehola settlement, which developed a fertilizer spreader on wheels using the company's fertilizer tanks.

The company's April 2014 newsletter featured a farm in the agricultural settlement of Masua that uses Haifa Chemicals fertilizers in its dates, lemons and grapes cultivation.

In October 2015, a company regional specialist held a meeting in the settlement of Petza'el with growers from agricultural settlements in the Jordan Valley. Growers received agronomic consultation on water and soil testing, fertilizer plans and company products.

On 18 June 2019, Who Profits recorded the presence of company products in the settlement of Mehola and near the settlement of Beit Ha'arava in the Jordan Valley.

The company also provides consulting services to growers in the occupied Syrian Golan.

The company sponsors a military unit of special-needs soldiers.

Revenue: 1.558 billion NIS in 2018

Traded: Private

Ownership: The company is owned by Trance Resource Inc., an American holding company controlled by the Trump Group, a Florida-based investment firm.

CEO: Motti Levin

Subsidiaries: Haifa North America (USA), Haifa Mexico (Mexico), Haifa South America (Brazil), Haifa North West Europe (Belgium), Haifa Iberia (Spain), Haifa Italia (Italy), Haifa France (France), Haifa South East Europe (Greece), Haifa Turkey (Turkey), Haifa East Asia (Thailand), Haifa China (China) Haifa Australia (Australia), Haifa South Africa (South Africa)

Head office: P.O. Box 15011, Matam-Haifa, Israel

Tel: +972-74-7373737

Website: www.haifa-group.com

Global presence: Australia, Belgium, Brazil, China, France, Greece, Mexico, South Africa, Spain, Thailand, Turkey, USA, Global



Israel Chemicals and Haifa Chemicals fertilizer bags| Mehola settlement, Jordan Valley, West Bank | Photo by Who Profits | 18 June 2019

Israel Chemicals (ICL Group)

Profile: An Israel-based global specialty minerals and chemicals company active in the agriculture, food and engineered materials market. ICL produces approximately a third of the world's bromine, and is the world's sixth largest potash producer. The company extracts potash and bromine from the Dead Sea.

Who Profits recorded the presence of products manufactured by the company's full subsidiary Fertilizers and Chemicals in several agricultural settlements in the Jordan Valley in the occupied West Bank in June 2019, including the settlements of Naama, Mehola and Na'aran.

The company's customer retention services include regional agronomists for the Jordan Valley ("Jordan Valley and Sharon"), the occupied Syrian Golan ("Galilee, Golan and Northern Jordan Valley [Emek Hayarden]") and the West Bank ("Judea and Samaria and Arab Sector").

In 2016-2017, the company participated in an agricultural experiment in almond trees in an orchard in Ramat Magshimim, a settlement in the Syrian Golan, testing the impact of its humic acids fertilizer Oded. In 2014, company fertilizers were used in an agricultural experiment conducted by the Jordan Valley R&D Center on the use of pesticides in bell peppers in Tomer settlement.

Revenue: 5.556 billion USD in 2018

Traded: New York Stock Exchange, Tel Aviv Stock Exchange (NYSE, TASE: ICL)

Ownership: The company is controlled by Israel Corporation Ltd., a publicly traded Israeli company (TASE: ILCO) that holds approximately 45% of ICL shares.

President and CEO: Raviv Zoller

Subsidiaries: Wholly-owned subsidiaries: Dead Sea Works Ltd. (Israel) Dead Sea Bromine Company Ltd. (Israel), Rotem Amfert Negev Ltd. (Israel), Mifalei Tovala Ltd. (Israel), Dead Sea Magnesium Ltd. (Israel), Ashli Chemicals (Holland) B.V. (Israel), Bromine Compounds Ltd. (Israel), Fertilizers and Chemicals Ltd. (Israel), Iberpotash S.A. (Spain), Fuentes Fertilizantes S.L. (Spain), ICL Europe Coöperatief

U.A. (Netherlands), ICL-IP Europe B.V. (Netherlands), ICL IP Terneuzen B.V. (Netherlands), ICL Fertilizers Europe C.V. (Netherlands), ICL Finance B.V. (Netherlands), Everris International B.V. (Netherlands), ICL Puriphos B.V. (Netherlands), ICL-IP America Inc. (USA), ICL Specialty Products Inc. (USA), Everris N.A. Inc. (USA), BK Giulini GmbH (Germany), ICL Holding Germany GmbH (Germany), ICL I.P. Bitterfeld GmbH (Germany), Rovita GmbH (Germany), Prolactal GmbH (Austria), Cleveland Potash Ltd. (UK), ICL Brasil, Ltda. (Brazil), ICL (Shanghai) Investment Co. Ltd. (China), ICL Asia Ltd. (Hong Kong), ICL Trading (HK) Ltd. (Hong Kong)

Partially-owned subsidiaries: Yunnan Phosphate Haikou Co. Ltd. (50%) (China), Sinobrom Compounds Co. Ltd., (75%) (China)

Partners: CropX, Evogene, Energean, Hebrew University of Jerusalem

Head office: Millennium Tower, 23 Aranha St., Tel Aviv, 61202 Israel

Tel: +972-36844400

Website: www.icl-group.com

Global presence: Argentina, Austria, Australia, Brazil, China, Germany, Hong Kong, Mexico, Netherlands, Spain, Turkey, USA, UK, Global



Israel Chemicals fertilizer tank | Na'ama settlement, Jordan Valley, West Bank | Photo by Who Profits | 18 June 2019

Naandan Jain Irrigation

Profile: An Israel-based global provider of irrigation solutions.

The company planned and carried out irrigation projects in the occupied West Bank and Syrian Golan.

Who Profits recorded the presence of company signs in an organic plantation in the settlement of Tomer in the Jordan Valley in 2009 and in a vineyard in the settlement of Ein Zivan in the Golan in 2018. The company has also provided irrigation services to the settlements of Carmel, Ma'on and Yatir in Mount Hebron.

The company has distributors in the Syrian Golan, the Jordan Valley and the Naqab (Negev) region.



NaanDan Jain Irrigation company sign | Tomer settlement,
Jordan Valley, West Bank | Photo by Who Profits | 4 February 2009

Revenue: 539.89 million NIS in 2018

Traded: Private, Subsidiary of Public

Ownership: The company is a wholly owned subsidiary of the Indian multinational corporation Jain Irrigation Systems through its holdings in Jain (Israel) B.V (94%) and Jain Overseas B.V (6%). Jain Irrigation Systems is publicly traded on the Indian National Stock Exchange under the ticker symbol JISLJALEQS.

CEO: Avner Hermoni

Subsidiaries: Naan Dan Agro-Pro Ltd. (Israel), NaanDan Jain France Sarl (France), NaanDan Jain Australia Pty Ltd. (Australia), NaanDan Do Brasil Participacoes Ltd. (Brazil), NaanDan Jain Industria E Comercio De Equipmentos Ltd (Brazil), NaanDan Jain Mexico, S.A. De C.V. (Mexico), NaanDan Jain S.R.L. (Italy), NaanDan Jain Iberica S.C. (Spain), NaanDan Jain Peru S.A. C (Peru), Naan Dan Jain Irrigation Projects S.R.L. (Romania), Jain Sulama Sistemleri Sanayi Ve Ticaret Anonim Sirkti (Turkey)

Partially owned subsidiaries: Agrologico Sistemas Technologicos, S.A. (Costa Rica) (60%), Agrologico de Guatemala, S.A. (Guatemala) (60%)
Joint Venture: Dansystems S.A. (Chile) (50%)

Partners: Jewish National Fund (JNF), Jerusalem Municipality

Head office: D.N. Eylon, Kibbutz Na'an 76829, Israel

Tel: +972- 8-9442119

Website: www.naandanjain.com

Global presence: Argentina, Australia, Brazil, Chile, China, Colombia, Costa Rica, France, India, Italy, Kazakhstan, Mexico, Peru, Romania, Spain, Turkey, USA



NaanDan Jain Irrigation company sign | Ein Zivan settlement, Syrian Golan | Photo by Who Profits | 10 November 2018

Rivulis

Profile: A private Israeli provider of micro irrigation solutions.

The presence of Rivulis irrigation equipment has been recorded in agricultural settlements in the Jordan Valley in the occupied West Bank in October 2017, March 2019 and June 2019. The purchase orders on all boxes documented by Who Profits were made by the Naama branch of Amir Agriculture, a representative of Rivulis.

In October 2018, Rivulis employees visited a date plantation of the agricultural cooperative of Mehola settlement in the northern Jordan Valley.

The company has regional sales directors for the Jordan Valley and the occupied Syrian Golan.



Rivulis Irrigation products | Jordan Valley, West Bank |
Photo by Who Profits | 18 June 2019

Traded: Private

Ownership: The company is majority owned by FIMI Opportunity Funds (59.5%). The remaining shares are held by P&P Water Holdings (25.5%) and Jaya Hind Industries (15%).

P&P Water Holdings is an affiliate of the global private equity investment firm Paine Schwartz Partners. Jaya Hind Industries is part of the Dr. Abhay Firodia Group, an Indian industrial house active primarily in the automotive industry.

In 2017, Rivulis entered into a merger agreement with the Greek irrigation company Eurodrip S.A. The merged company is the second

largest irrigation corporation outside of India.

CEO: Richard Klapholz

Subsidiaries: Rivulis Plastro (100%), Manna Irrigation Intelligence (100%)

Partners: Polyplastic (Russia), Jewish National Fund (JNF)

Head office: Gvat 3657900, Israel

Tel: +972-737800200

Website: www.rivulis.com

Global presence: Australia, Argentina, Brazil, Chile, China, Egypt, France, India, Greece, Mexico, Peru, Philippines, Russia, Singapore, Spain, Turkey, USA



Rivulis Irrigation boxes | Beit Haarava settlement, Jordan Valley, West Bank | Photo by Dror Etkes | 28 March 2019



Rivulis Irrigation | Jordan Valley, West Bank | Photo by Who Profits | 18 October 2017

Roots Sustainable Agricultural Technologies

Profile: A publicly traded Israeli company specializing in developing and commercializing plant climate management technologies. The company is a former participant in the Israeli Office of the Chief Scientist's Incubator Program.

The company's Root Zone Temperature Optimization (RZTO) technology has been implemented in agricultural settlements in the Jordan Valley in the occupied West Bank, including in the settlement of Mehola.

The company's RZTO technology is eligible for a subsidy of up to 30 percent for basil growers under the Israeli government's Precision Ag Program, a collaboration between the Ministry of Agriculture and the Ministry of Finance.

Revenue: 305 million USD in 2018

Traded: Australian Stock Exchange (ASX:ROO)

Ownership: Major shareholders: Boaz Wachtel (8.08%), Sharon Devir (4.46%), Suburban Holdings PTY Limited (4.43%), Youdim Pharmaceuticals (4.09%), JP Morgan Nominees Australia (3.92%), CST Capital PTY Ltd (2.51%), Horatio St. PTY Ltd (1.68%), HSBC Custody Nominees (Australia) Limited (1.47%)

Executive Chairman and CEO: Sharon Devir

Executive Director: Boaz Wachtel

Partners: Dagan Agricultural Automation, Cannodoc Limited, American Farms Consulting LLC

Head office: Beit Halevy 202, 4287000, Israel

Tel: +972-9-768-9995

Website: www.rootssat.com

Global presence: Australia, China, South Korea, Spain, USA

Weaponizing Agritech: Herbicide Spraying in Gaza

In the besieged Gaza Strip, repeated military attacks and structural impediments to agricultural production and trade have in recent years been compounded by a more direct assault on the ability of Palestinian farmers to cultivate their lands: the use of herbicide spraying to damage and destroy Palestinian crops.

In December 2015, the Israeli military confirmed that it had used herbicides and germination inhibitors to destroy vegetation inside Gaza.⁴⁹ In 2018, the Palestinian Agriculture Ministry estimated that spraying of glyphosate, oxyfluorfen and diuron damaged some 14,000 dunams of agricultural and pasture land in Gaza, since 2014.⁵⁰ An administrative petition⁵¹ filed by the Israeli NGO Gisha Legal Center for Freedom of Movement under the Freedom of Information Act revealed that the spraying was carried out by two private civilian aviation companies, Telem Aviation and Chim Nir, under a contract with the Israeli Ministry of Defense (IMOD).⁵² The IMOD's Gaza Division is the body directly responsible for the sprayings.⁵³

49 Schaeffer Omer-Man, Michael. [IDF admits spraying herbicides inside the Gaza Strip](http://bit.ly/2OHsMq1). *+972 Magazine*, 28 December 2015. <http://bit.ly/2OHsMq1>

50 Hass, Amira. [Farm warfare: How Israel uses chemicals to kill crops in Gaza](http://bit.ly/2B8FtLL). *Haaretz*, 9 July 2018. <http://bit.ly/2B8FtLL>

51 Gisha – Legal Center for Freedom of Movement, [Gisha files Freedom of Information Application about herbicide spraying practices in and around the Gaza Strip](http://bit.ly/31avyH4). AP (Tel Aviv) 36043-07-16 *Gisha v. Ministry of Defense Freedom of Information Officer et al.* 20 July 2016. <http://bit.ly/31avyH4>

52 Gisha – Legal Center for Freedom of Movement, [Ministry of Defense Answer to FOI](http://bit.ly/33kkBnI). 12 February 2017. <http://bit.ly/33kkBnI>

53 Hass, Amira. [Farm warfare: How Israel uses chemicals to kill crops in Gaza](http://bit.ly/2B8FtLL). *Haaretz*, 9 July 2018. <http://bit.ly/2B8FtLL>

The International Committee of the Red Cross (ICRC) told the Israeli newspaper Haaretz that as a result of the spraying, “crops as far as 2,200 meters from the border fence were damaged”, with some crops 100-900 meters from the fence “completely destroyed.” This included areas under an ICRC project to rehabilitate Gazan farmland damaged by Israeli military attacks. The ICRC further stated that the chemicals used may have negative health impacts on those who consume affected crops or inhale the chemicals.⁵⁴



Israeli soldiers shoot tear gas at Palestinian protesters participating in the Great March of Return | Gaza | Photo by Activestills | 30 March 2019

In November 2017, the IMOD rejected damage claims by eight Palestinian farmers. Two years prior to this, the IMOD paid 61,900 NIS (around 16,000 USD) to Nahal Oz, an Israeli kibbutz on the other side of the fence whose fields were damaged by army spraying, under a settlement agreement.⁵⁵

A recent investigation by the UK-based, research agency Forensic Architecture, analyzed the drift of herbicides in combination with farmers’ testimonies and satellite imagery and confirmed that “agricultural lands

54 Ibid

55 Ibid

more than 300m from Gaza's eastern border experienced damage, and with concentrations of herbicides above the recommended amounts for drift, according to the European Union."⁵⁶ According to the report, the spraying is carried out during key harvest periods, targeting spring and summer crops, following the advice of a civilian agronomist contracted by the Israeli military.⁵⁷

Bayer AG (The Monsanto Company)

Profile: A publicly traded German pharmaceutical and life science corporation. In 2018, Bayer acquired The Monsanto Group, one of the world's largest agriculture companies, for 63 billion USD.

Monsanto is the developer and manufacturer of 'Roundup', a glyphosate-based herbicide. Glyphosate is the most widely-used herbicide in the world, leaving traces in soil, foodstuffs, air, and water, as well as human urine.

A contract between the IMOD and Israeli aviation companies for herbicide spraying around the besieged Gaza, obtained by Gisha Legal Center for Freedom of Movement in response to a Freedom of Information request, indicated the 'Roundup' brand among the specific brands of herbicides to be used.

The Monsanto Company has historically been involved in herbicidal warfare. The company, along with Dow Chemical, was a major provider of 'Agent Orange', the herbicide and defoliant chemical used by the US military in Vietnam.

In addition, Bayer is an investor in Israeli agritech. In 2016, Bayer and the Israeli Trendlines Group Ltd set up The Bayer Trendlines Ag Innovation Fund, a company focused on developing products for disease control in agriculture.

In 2019, the company signed a three-year research partnership with the Israeli based irrigation company Netafim and the knowledge transfer company of the Israeli Ben-Gurion University of the Negev (BGU). The three will collaborate to develop drip irrigation as a

56 Forensic Architecture, [Herbicidal Warfare in Gaza](http://bit.ly/35txEWO). July 2019. <http://bit.ly/35txEWO>

57 Ibid

delivery system for Bayer's chemical pesticide.

Bayer is also a backer of Finistere Ventures, a US-based agritech venture capital fund with investments in Israeli agritech. In 2019, Finistere, together with the Israeli capital venture platform OurCrowd and [Tnuva](#) and Tempo Beverages corporations, announced a partnership to invest 100 million USD in Israeli agricultural and food technologies.

Revenue: 39.586 billion EUR in 2018

Traded: Frankfurt Stock Exchange (FWB: BAYN)

Ownership: Bayer has a 100% free float as defined by Deutsche Börse. At the end of 2018, the company has approximately 383,000 shareholders listed in its share register. Approximately 30% of shares are held by investors in the US and Canada, followed by 20% in Germany.

Chairman and CEO: Werner Baumann

Subsidiaries: The company has hundreds of subsidiaries, affiliates and joint ventures worldwide.

Israeli subsidiaries: AB Seeds Ltd (100%), AB Seeds Sales Ltd (100%), Bayer Israel Ltd (100%), Beeologics IL Ltd (100%), Bayer Trendlines AG Innovation Fund (Joint Venture) (100%)

Partners: Strategic partnerships include BASF SE, Evogene, Nimbus Discovery Inc, Nomad Bioscience GmbH, Targenomics GmbH.

R&D collaborations include Compugen Lrd, Evotech AG, Orion Corporation, X-Chem, University of Oxford, Vanderbilt University, John Hopkins University, Johnson and Johnson.

The company is part of the global alliance Better Life Farming together with the Israeli irrigation company Netafim, the International Finance Corporation and Swiss Re Corporate Solutions.

Head office: 51368 Leverkusen, Germany

Tel: +49 214 30-1

Website: www.bayer.com

Global presence: Global

The Civilian Afterlife of Military Technologies

The use of the occupied Palestinian territory and its captive population as a laboratory for the testing of new technologies by the Israeli military apparatus and private corporations is well documented, as is the marketing and exportation of these technologies as 'battle-proven'.⁵⁸ In this report, we show how the commercialization of occupation-generated Israeli military know-how, extends beyond the security industry and into civilian markets, including the growing field of agricultural technologies.

Though the adaptation of military technology for civilian use is a well-known global phenomenon, this report argues that in the Israeli case, the reality of a prolonged military occupation has been the driving engine behind a prolific and highly profitable defense industry, resulting in a symbiotic relationship between the private sector and the state military apparatus. Its extension into civilian spheres such as smart agriculture further cements the vested interest of private corporations in the perpetuation of the status quo. Consequently, companies that specialize in irrigation technology or crop protection become implicated in the state military apparatus.

In order to demonstrate the growing link between military and agricultural technologies, Who Profits examines four recent collaborations between agritech and military companies. All four cases hinge upon the

58 See for example Who Profits, [Proven Effective: Crowd Control Weapons in the Occupied Palestinian Territories](http://bit.ly/2OGTntW). May 2014. <http://bit.ly/2OGTntW>; Cooke, Jonathan. "The Lab": Israel Tests Weapons, Tactics On Captive Palestinian Population. Special Report. *Washington Report on Middle East Affairs*, September 2013, p. 16-17. <http://bit.ly/2OHvex1>; Hamushim, [A Lab and a Showroom: The Israeli Military Industries and the Oppression of the Great March of Return in Gaza](http://bit.ly/2orHGGv). June 2018. <http://bit.ly/2orHGGv>

commercialization of military knowledge developed in the context of the Israeli occupation. The first involves a partnership between the Israeli irrigation technology provider Netafim and mPrest Systems, the developer of the command and control system in the Israeli missile defense system, Iron Dome. The second involves the adaptation of the Cormorant, an unmanned aircraft developed in collaboration with the Israeli military's medical corps, for aerial spraying. The final two are collaborations between agritech companies and two major Israeli military corporations, Elbit Systems and the state-owned Israel Aerospace Industries.



An Israeli drone documented in a Great March of Return demonstration | Gaza | Photo by Activestills| 10 August 2018

CASE STUDY 1

Iron Dome: From the Battlefield to the Agro-field

NetBeat™ is a smart irrigation management platform that allows farmers to monitor, analyze and control irrigation systems remotely in one closed-loop platform, generating customized daily irrigation strategies and providing real-time data.⁵⁹ It was launched by Netafim, an Israeli precision agriculture corporation, in May 2018. It is marketed as “the first irrigation system with a brain”.⁶⁰

The system’s ‘brain’ was developed by mPrest Systems, an Israel-based global provider of monitoring and control and big data analytics software. According to the CEO of Netafim, mPrest was awarded the contract due to the company’s “field-proven software”.⁶¹ The ‘field’ in which mPrest’s technology was proven was not the kind that farmers cultivate, but rather the Israeli battlefield of prolonged occupation and ongoing siege.

mPrest Systems, a partially-owned subsidiary (40%) of the Israeli state-owned military corporation Rafael Advanced Defense Systems, developed the command and control software for the Israeli missile defense system, Iron Dome, often referred to as the ‘brains’ of Iron Dome. Iron Dome is a short range missile defense system developed by Rafael in conjunction with Elta and mPrest, deployed along the besieged Gaza Strip and in the occupied Syrian Golan. During the 2014 Israeli military assault on Gaza, Iron Dome received extensive media coverage, attracting the interest of

59 Netafim, Sustainability Report 2016-2017. On file with Who Profits.

60 Netafim, NetBeat™ Fact Sheet. On file with Who Profits.

61 mPrest Systems Press Release. On file with Who Profits.

states like Taiwan, India and South Korea.⁶² The system developed by mPrest, called C⁴, is responsible for Iron Dome's air awareness picture building, target classification, calculating interception programs and controlling launch and interception processes.⁶³

The Iron Dome command and control software is mPrest's flagship product and the source of much of its commercial success:

*"We earned our stripes in the highly demanding defense market, having developed some of the industry's most advanced and sophisticated command and control applications, including the software behind the world-renowned **Iron Dome** missile defense system. We soon realized that this battle-proven technology is exactly what IIoT [the Industrial Internet of Things] markets require for digital transformation.*

*Over the past decade, we've focused on transforming these intelligent, real-time defense IoT capabilities to commercial applications."*⁶⁴

NetBeat™ is one such commercial application. Netafim's website describes it as "the result of the best professionals" in development teams in eight countries, over 120 engineers from Israeli technology companies and military knowledge developed by mPrest, "the creators of iron dome".⁶⁵ The collaboration shows the profit potential of making available to the agritech market, technology developed specifically for the Israeli military in the context of the ongoing siege on Gaza.

62 Hamushim, [The Gaza Laboratory – Protective Edge](http://bit.ly/31bpj5U). <http://bit.ly/31bpj5U>

63 mPrest Systems and Rafael Advanced Defense Systems, Iron Dome Command and Control Center, on file with Who Profits.

64 mPrest Systems Company Brochure, on file with Who Profits.

65 Netafim, [Introducing Netbeat™ - The First Irrigation System with a Brain](http://bit.ly/2q6mNkp). <http://bit.ly/2q6mNkp>

Netafim

Profile: An Israel-based global provider of irrigation technologies.

In 2004, Netafim accompanied and contributed the equipment for an experiment on the effect of feeding canals on the yield and fruit size of lemons in the settlement on Masua in the Jordan Valley, occupied West Bank.

In 2009, Netafim provided irrigation technologies for an experiment in controlling the size of olive trees in the settlement of Geshur in the occupied Syrian Golan.

In 2012, the company provided irrigation technologies for the betterment of grapevines in a commercial crop of cabernet sauvignon grapes in the settlement of Dolev in the West Bank. The project is part of an agricultural experiment of the R&D centers Samaria and Jordan Rift and Central Mountain. Following this project, Netafim participated in a conference about growing grapevines in the mountain area that took place in the settlement university of Ariel in 2016.

In 2013-14, Netafim developed and provided irrigation technologies for watermelon crops to the settlement of Kalia in the Jordan Valley. Kalia cultivates approximately 1,500 dunam of watermelon and controls some 15% of the seedless watermelon market in Israel.

In 2014, the company provided irrigation technologies and services to the Mount Hebron settlement regional council and the settlement of Maskiot.

In 2014-2017, Netafim provided products and developed irrigation technologies for researching the best irrigation method for growing Mejdool dates in the Jordan Valley, taking place in the settlement of Gilgal.

In 2019, a computerized Netafim drip irrigation and fertilization system was installed in blueberry fields in the occupied Syrian Golan.

In collaboration with the private Israeli company mPrest, a partially-owned subsidiary (40%) of the state-owned military corporation Rafael Advanced Defense Systems, Netafim developed a NetBeat™, a smart irrigation management platform. mPrest developed the command and control software used in Iron Dome, the Israeli military's air defense system. The digital irrigation platform incorporates mPrest's

military technology, developed specifically for Iron Dome.

Revenue: 945 million USD in 2018

Traded: Private | Subsidiary of Public

Ownership: In 2018, Mexichem completed the acquisition of 80% of the company's shares. The remaining shares (20%) are held by Kibbutz Hazerim through Netafim Holdings Hatzerim Cooperative Society for Drip Irrigation Ltd.

Mexichem is a publicly traded Mexican multinational corporation active in the sectors of infrastructure, agriculture, transportation, telecommunications and energy. Mexichem is publicly traded on the Mexican Stock Exchange under the ticker symbol of MEXCHEM*.

CEO: Ran Maidan

Subsidiaries: The company has 29 subsidiaries and 17 production plants based in Israel, Spain, Australia, India, USA and Latin America.

Partners: mPrest Systems, Bayer, International Finance Corporation, Swiss Re Corporate Solutions, CalRecycle

Head office: 10 HaShalom Rd. Tel Aviv 6789212, Israel

Tel: +972-8-647-4747

Website: www.netafim.com

Global presence: Global

mPrest Systems

Profile: A private Israel-based global provider of monitoring and control solutions for the defense, security, utility and Industrial Internet of Things (IoT) sectors.

The company developed the C⁴I system for Iron Dome, the Israeli air defense system developed by Rafael Advanced Defense Systems. The C⁴I system is responsible for the air awareness picture building, target classification, calculating interception programs and controlling launch and interception processes.

The company markets its command and control applications as "battle-proven technology" based on its role in the development of Iron Dome. Through collaborations with companies such as Netafim and Foresight Autonomous Holdings (NASDAQ and TASE: FRSX), a

publicly traded Israeli technology company, the company adapts its military technology for commercial use.

The company developed an Information Grid project for the Israel Electric Company (IEC) known as the Sarig HaMeyda (Hebrew: Information Tendril) system. The system controls IEC operational and strategic sites and enables central and dispersed command over various security systems, including CCTV cameras and electronic fences. The mPrest platform connects tens of thousands of sensors across 600 IEC sites and mobile assets and aggregates and analyzes data in real-time.

The project, intended to control all IEC sites, was completed in January 2017. In July 2018, the IEC announced that it contracted the company without tender for a period of two years for the maintenance of the system.

In 2019, the IEC declined a Freedom of Information request submitted by Who Profits regarding the specific locations in which the system is installed.

Traded: Private

Ownership: The Israeli state-owned military corporation Rafael Advanced Defense Systems holds a 39.63% stake in mPrest. Preferred stock shareholders include Vector Limited, Angeleno Investors III, GE Ventures, Ourcrowd International Investment II, Ourcrowd (Investment in mPrest), Ourcrowd (Investment in mPrest II), Ourcrowd (Investment in mPrest III), Hermetic Trust (1975).

CEO: Natan Barak

Subsidiaries: mPrest-Electric (100%)

Partners: Southern Company (NYSE:SO), New York Power Authority, Mekorot – Israel’s National Water Company, Foresight (NASDAQ and TASE: FRSX), Vector, Netafim, UMS Group, San Diego Gas & Electric, Bezeq, Reliance Industries Limited

Head office: 94 Shlomo Melzer, Petah Tikva, Israel

Tel: +972-732166666

Website: www.mprest.com

Global presence: Global

CASE STUDY 2

Ag-Cormorant: From Evacuating Soldiers to Aerial Spraying

In March 2019, the Chinese-owned crop protection company Adama and the Israeli aeronautics company Tactical Robotics announced a partnership to conduct a joint feasibility study on repurposing the latter's unmanned aerial vehicle (UAV), intended for rescue purposes, for agricultural use.

The Cormorant (formerly AirMule) is a multi-role, compact, high payload, unmanned Vertical-Take-Off-and-Landing (VTOL) aircraft developed by Tactical Robotics Ltd., a fully owned subsidiary of Urban Aeronautics Ltd. From its inception, the development of the Cormorant has been directly linked to the needs and priorities of the Israeli military apparatus. Following the 2006 Israeli military assault on Lebanon, the Israeli military began to examine the possibility of a UAV to evacuate wounded soldiers, including in urban areas.⁶⁶ In 2009, the Israeli military's medical corps announced that Urban Aeronautics' AirMule was a leading candidate for procurement.⁶⁷ In 2011, the Israeli Ministry of Defense (IMOD) told the Israeli newspaper *TheMarker* that it was a partner in Urban Aeronautics' investment in a technology demonstrator intended to promote relevant tech capabilities.⁶⁸

66 Israel army: UAV's to evacuate wounded. United Press International, Inc. 7 August 2009. On file with Who Profits.

67 The Future Belongs to Unmanned MedEvac. Israeli army, 6 August 2009. On file with Who Profits.

68 Grimland, Guy. [The flying car is already here, but only in military version](http://bit.ly/2MbhtVw). *TheMarker*, 27 January 2011. <http://bit.ly/2MbhtVw>

A 2010 Israeli Air Force Journal article provides insight into the Cormorant's intended military use, describing a fictional scenario of "a takeover operation in one of the cities of the [West] Bank. The IDF [sic] force is on the 14th floor of a high-rise building engaged in an exchange of fire. During the battle a soldier is injured in the abdomen and the team commander has to evacuate him for medical care as soon as possible. At the moment it is risky to send an evacuation vehicle and a jet rescue in urban territory is dangerous and highly complicated and may last hours." Lieutenant Colonel Galzberg tells the journalist that "'in the not-distant future'" UAVs like the Cormorant could make such evacuations possible.⁶⁹

Presently, the Israeli military's medical corps collaborate with Tactical Robotics in the development of the Cormorant, in order to ensure the UAV meets the army's specific requirements.⁷⁰ The Cormarant has been given the military code name 'Dragonfly' [Hebrew: Shafirrit]. In May 2018, Tactical Robotics performed a first "mission representative" demonstration to the Israeli military, described by the company as its "lead customer".⁷¹

In August 2018, four months after the demonstration of the Cormorant to the Israeli military, the company published a document detailing the Cormorant's possible use in agriculture. The document positions the UAV as "the answer" to the shortage of ag-pilots and the increasing restrictions on aerial application due to drift of products to populated areas and neighboring fields.⁷² The Cormorant's high precision, developed to meet the requirements of an occupying army routinely engaged in urban warfare in densely populated civilian areas, is marketed as a key strength in agricultural applications. This precision allows it to maneuver through tree canopies, to apply chemicals to specific areas, and to fly

69 Itamar, Itay. [An Injured Man's Mule](http://bit.ly/3190g1x). *Air Force Journal*, 195, 28 October 2010. <http://bit.ly/3190g1x>

70 Amikam, Itay. [The future of casualty evacuation: Through unmanned aircrafts](http://bit.ly/2OHZLQ3). *Ynet*, 12 June 2018. <http://bit.ly/2OHZLQ3>

71 Tactical Robotics, PRESS RELEASE: Tactical Robotics' Cormorant Achieves IDF Mission Demo Milestone. On file with Who Profits.

72 Tactical Robotics. Use of the Cormorant UAV in Agriculture. On file with Who Profits.

without creating updraft and causing drift, as other aircrafts do.⁷³

The partnership with Adama, one of the world's largest global crop protection companies and the first to be publicly traded on the Chinese stock market, allows Tactical Robotics and its parent company Urban Aeronautics to further benefit from the commercialization of technology developed for Israeli military use.

ADAMA

Profile: A publicly traded China-based global crop protection company. Crop protection products manufactured by the company's Israeli subsidiary Adama Makhteshim have been used in agricultural experiments conducted by settler research institutes in the Jordan Valley, occupied West Bank and the occupied Syrian Golan.

In November 2016, as part of a conference and tour organized by the Jordan Valley R&D Center, a company representative presented research on the toxicity of its Nimitz nematicide product tested in Jordan Valley settlements.

The company's products were also used in agricultural experiments conducted by the same R&D Center in 2017-2018 and 2015-2016, taking place in the settlement of Tomer and the R&D Center's own facility in the Jordan Valley respectively.

The company's products were also used in an agricultural experiment conducted by the Institute for the Study of the Golan at the University of Haifa's Katzrin campus in the occupied Syrian Golan in 2013.

The company employs regional specialists for the Jordan Valley and the Syrian Golan, and has authorized distributors in the settlements of Avnei Eitan in the Golan and Tomer and Na'ama in the Jordan Valley.

Adama partnered with Tactical Robotics, a subsidiary of Urban Aeronautics, in a joint feasibility study for adapting the Cormorant, a multi-role, high payload, unmanned Vertical-Take-Off-and-Landing

73 Ibid

(VTOL) aircraft developed for military use, for aerial spraying. The Cormorant was developed in collaboration with the Israeli military's medical corps. In May 2018, Tactical Robotics performed a first "mission representative" demonstration to the Israeli military, described by the company as its "lead customer".

Revenue: 3.9 billion USD in 2018

Traded: Shenzhen Stock Exchange (SZSE: 000553, 200553)

Ownership: ChemChina, wholly owned by the Chinese Central Government, is the controlling shareholder (74.02%) through its holdings in China National Agrochemical Corporation. Other shareholders include Jingzhou Sanonda Holding Co., Ltd. (4.89%), China Cinda Asset Management Co., Ltd. (1.37%) and China Structural Reform Fund Co., Ltd. (1.37%).

CEO: Chen Lichtenstein

Subsidiaries: Wholly owned subsidiaries: ADAMA France S.A.S (France), ADAMA Brasil S/A (Brazil), ADAMA Deutschland GmbH (Germany), ADAMA India Private Ltd. (India), Makhteshim Agan of North America, Inc. (USA), ADAMA Agan Ltd. (Israel), ADAMA Makhteshim Ltd. (Israel), ADAMA Australia Pty Limited (Australia), ADAMA Italia SRL (Italy)

Partially owned subsidiaries: Control Solutions Inc. (USA) (67%), ADAMA Northern Europe B.V. (Netherlands) (55%), Alligare LLC (USA) (80%)

Partners: Tactical Robotics (Israel), AgroWebLab (Israel), Jiangsu Huifeng Bio Agriculture Co., Ltd (China), Ceradis (Netherlands), ALRISE Biosystems (Germany), Pessl Instruments (Austria)

The company's Israeli subsidiary markets products by various international brands, including Monsanto, Nisso, Nufarm and Bayer.

Head office: No. 93, East Beijing Road, Jingzhou, Hubei, 434001 China

Tel: +86-0716-8208632

Website: www.adama.com

Global presence: Australia, Brazil, France, Germany, India, Israel, Italy, USA, Global

Tactical Robotics

Profile: A private Israeli company that develops unmanned VTOL aircraft primarily for military utility and cargo missions.

Traded: Private

Ownership: The company is a fully-owned subsidiary of the private Israeli company Urban Aeronautics.

Urban Aeronautics shareholders include Nettuno Fiduciaria S.r.l, Malp LLC, Pursa LLC, Westcoast S.A, Jetson Shareholdings Ltd, Qubit Investments Pte Ltd, Oxford Equity Holdings, Teodoro 29 Corp, Inc Adept, Sky Vehicle Funding, Orbita HK Limited, BKL Investments Ltd, KFW Capital GmbH & Co. KG

CEO: Rafi Yoeli

Subsidiaries: Urban Aeronautics also fully owns Metro Skyways Ltd.

Partners: Adama Ltd., Safran Helicopter Engines, Green Hill Software

Head office: 10 Nahal Snir, Yavne 81224, Israel

Tel: +972-8-9433640

Website: www.tactical-robotics.com

CASE STUDY 3

Phenomics Consortium: Technologies of Repression in the Service of Plant Identification

Elbit Systems has become notorious for its extensive involvement in the Israeli occupation. The publicly traded Israeli military contractor is the largest private arms company in Israel and a key supplier of the Israeli military, generating nearly a fifth of its revenue from sales to the IMOD.⁷⁴ A number of the company's unmanned aerial vehicles (UAV), such as the 7.5 Skylark, and the Hermes 450 and 900 were used in the 2014 Israeli military assault on Gaza. In July 2014, during the peak of the assault, its profits increased by 6.1%.⁷⁵ Elbit has also been one of the main providers of the electronic detection fence system which is part of the Separation Wall in the occupied West Bank and is responsible for the tunnel detection system installed as part of the matrix of technologies used to maintain the siege on Gaza.⁷⁶

An accomplished developer and exporter of repressive technologies, Elbit Systems has recently set its sights on adapting its technological capabilities to the civilian sector, and specifically the precision agriculture market.⁷⁷ Together with a number of Israeli corporations and academic institutions, the company joined the Phenomics Consortium, a multi-year government initiative for the development of tools and systems for precision agriculture.

74 Who Profits, [Elbit Systems Company Profile](http://bit.ly/32cpyib). <http://bit.ly/32cpyib>

75 Who Profits, [Elbit Systems' Complicity in the Assault on Gaza 2014](http://bit.ly/2IHlUz), November 2014. <http://bit.ly/2IHlUz>

76 Who Profits, [Elbit Systems Company Profile](http://bit.ly/32cpyib). <http://bit.ly/32cpyib>

77 Atzmon Schmayer, Irad, [Drones in the Air and Sensors in the Ground: How Israeli Farmers Plan to Feed Billions](http://bit.ly/32cqaEv). *Haaretz*, 11 October 2018. <http://bit.ly/32cqaEv>

The Phenomics Consortium, which was launched in 2018 by the Israel Innovation Authority (IIA) with a budget of 16.5 million USD, is a government initiative which consists of six Israeli corporations: Evogene, Elbit Systems, Opgal Optronic Industries, Hazera Seeds, Sensilize and Rahan Meristem, and four Israeli academic institutions, Volcani Center, Technion – Israel Institute of Technology, Ben Gurion University and Haifa University.⁷⁸

Through the consortium, IIA aims to combine Israel's agritech R&D and its (largely military-based) sensors industry to economically advance both industries. Agritech companies like the publicly traded Evogene (NASDAQ and TASE: EVGN) provide expertise in computational biotechnology and life science, while military and technology companies like Elbit Systems and Opgal Optronic Industries provide Big Data analysis, AI algorithms and thermal imaging capabilities, with the end goal of developing commercial products.⁷⁹ Any Intellectual Property developed by the consortium is to be shared among its members.⁸⁰

For Elbit, this means altering its military drones for civilian use and installing electro-optical indexes,⁸¹ and developing a calibrated system to measure plant properties using the company's sensor technology.⁸² The Phenomics Consortium provides the company with a platform from which to penetrate the global precision agriculture market, as part of the 'solution' to the global food crisis despite its products having been tested on an occupied Palestinian population through aerial bombings and militarized walls. This 'sanitized' version of repressive remote sensing

78 [Israel Innovation Authority precision agriculture consortium launched with 60 million NIS investment](#) (Hebrew). Press Release. Israel Innovation Authority, 29 January 2018.

79 Dr. Laserson, the innovation director in Elbit's computerization and cyber division, states that: "We aspire to reach products, and therefore work in an agile process - develop something and immediately test it in the agricultural world, in order to proceed faster and with better suitability for the agro companies." [The computer that identifies plant diseases – the Phenomics Consortium invention](#). Israel Innovation Authority. <http://bit.ly/2ILzSGn>

80 Opgal Optronic Industries Press Release. On file with Who Profits.

81 Atzmon Schmayer, Irad, [Drones in the Air and Sensors in the Ground: How Israeli Farmers Plan to Feed Billions](#). *Haaretz*, 11 October 2018. <http://bit.ly/32cqaEv>

82 [The computer that identifies plant diseases – the Phenomics Consortium invention](#). Israel Innovation Authority. <http://bit.ly/2ILzSGn>

and UAV technology, helps whitewash Elbit as the producer of innocent technological innovation.

Beyond the consortium, Elbit is also testing a civilian agritech application of its Hermes 450 drones in North Dakota, USA, filming fields and gathering aerial data to be sold to US farmers.⁸³ The Hermes family drones are one of the products most widely used by the Israeli army, particularly in besieged Gaza. The Hermes 450 can carry up to two medium range missiles and was regularly deployed against civilians in Gaza during the 2014 military assault.⁸⁴

Evogene

Profile: A publicly traded Israeli computational biotechnology company developing products for agriculture, human health and life-science based industrial applications.

Revenue: 1.7 million NIS in 2018

Traded: NASDAQ, Tel Aviv Stock Exchange (NASDAQ and TASE:EVGN)

Ownership: Principal shareholders include Waddell & Reed Financial, Inc. (10.9%), All directors and executive officers as a group (16 persons) (9.9%), Migdal Insurance & Financial Holdings Ltd. (7.4%), The Phoenix Holding Ltd. (6.8%), Senvest Management, LLC (6.8%), Monsanto Company (6.4%), UBS Group AG (5.3%)

President and CEO: Ofer Haviv

Subsidiaries: AgPlenus Ltd. (100%), Canonic Ltd. (100%), Evofuel Ltd. (100%), Evogene Inc. (USA) (100%), Lavie Bio Ltd. (100%), Biomica Ltd. (90.9%)

Partners: ICL Group, Monsanto, Elbit Systems, BASF – The Chemical Company, Bayer, Biogemma, Corteva Agriscience, Marrone Bio Innovations, Rahan Meristem, TMG, IM Amt, Castor Oil Argentina, Domrep Energia, Fantini s.r.l.

83 Atzmon Schmayer, Irad, [Drones in the Air and Sensors in the Ground: How Israeli Farmers Plan to Feed Billions](http://bit.ly/32cqaEv). *Haaretz*, 11 October 2018. <http://bit.ly/32cqaEv>

84 Who Profits, [Elbit Systems' Complicity in the Assault on Gaza 2014](http://bit.ly/2IHbUz). November 2014. <http://bit.ly/2IHbUz>

Head office: 13 Gad Feinsein St. Park Rehovot, Rehovot 7612002, Israel

Tel: +972-8-9311900

Website: www.evogene.com

Global presence: USA

Elbit Systems

Profile: A publicly traded Israeli military corporation operating in a wide range of areas including, aerospace, land and naval systems, command, control, communication, computers, intelligence and surveillance.

Elbit is Israel's second biggest arms company and the largest private one. Its single biggest customer is the IMOD, which accounts for nearly a fifth of its annual sales.

Elbit supplies 85% of UAVs used by the Israeli army. One of Elbit's most famous UAVs the Skylark – an intelligence gathering drone, operational in the Israeli army since 2008 – is used in Israeli aerial assaults on the besieged Gaza Strip, as well as during military operations in the occupied West Bank.

The company has been one of the main providers of the electronic detection fence system which is a part of the Separation Wall in the occupied West Bank. Elbit, in cooperation with the Israeli military, also developed a tunnel detection system installed as part of the matrix of technologies used to keep around 2 million Palestinians besieged in Gaza.

In 2018, the company acquired the state-owned weapons company Israel Military Industries (IMI), a major manufacturer of weapons, munitions and military technology for the Israeli army.

The heavy reliance of the Israeli army on Elbit products serves as a marketing tool for the company, which markets its products as 'battle-tested' and claims "outstanding capabilities" based on "operational experience gained through tens of thousands of operational sorties by the IDF [sic]".⁸⁵

⁸⁵ For a full account of Elbit Systems' occupation-related activities, see Who Profits, [Elbit Systems Company Profile](http://bit.ly/32cpyib). <http://bit.ly/32cpyib>

Revenue: 3,683.7 million USD in 2018

Traded: NASDAQ, Tel Aviv Stock Exchange (NASDAQ and TASE: ESLT)

Ownership: Federmann Enterprises Ltd. holds 44.34% of the company's shares

CEO: Bezhael Machlis

Subsidiaries: major subsidiaries include Elbit Systems of America, Elop, ESLC, Elisra, and Israel Military Industries

Partners: Evogene, ATR, Gaia Automotive Industries, Garden Reach Shipbuilders & Engineers

Head office: P.O.B 539, Haifa 31053, Israel

Tel: +972-4-831-5315

Website: www.elbitsystems.com

Global presence: Brazil, France, Germany, India, USA, Global

CASE STUDY 4

BirdEye 650D: Surveilling Populations, Monitoring Crops

In January 2019, the Israeli state-owned military corporation Israel Aerospace Industries (IAI) and the Brazilian agritech company Santos Lab signed an agreement for the application of IAI's drone and advanced analytics technology for large scale precision agriculture. The agreement is expected to generate hundreds of millions of dollars in profits over the next decade and involves the provision of UAV systems and data analysis by IAI. Under its terms, Santos Lab will operate a modified version of the BirdEye 650D UAV, adapted to include hyper-spectral-wide coverage imager specifically for precision agriculture.⁸⁶ The BirdEye 650D, an advanced, long endurance SMALL Tactical Unmanned Aerial System (UAS) marketed to armies and law enforcement authorities worldwide, is part of IAI's BirdEye series, which also includes the BirdEye 400 and the BirdEye 650.

IAI is the main supplier of aerial systems to the Israeli military, and sales to the IMOD accounted for 21% of its annual revenue in 2018.⁸⁷ According to the company, its contracts with the IMOD serve as a "business card"⁸⁸ among potential customers, and its close connections with the Israeli military enable it "to test its products, thereby aiding in improving the systems and products and their marketing in different countries".⁸⁹ In 2018, IAI and its subsidiary ELTA paid 14 million USD in royalties to the

⁸⁶ Globes correspondent, [IAI teams with Brazil's Santos on precision agriculture drones](http://bit.ly/33qPQNW). *Globes*, 9 January 2019. <http://bit.ly/33qPQNW>

⁸⁷ Israel Aerospace Industries, 2018 Annual Report, p. 124. On file with Who Profits.

⁸⁸ *Ibid*, p. 37

⁸⁹ *Ibid*, 44

IMOD for military exports.⁹⁰

IAI products and technologies are heavily used by the Israeli military, and its UAVs were used in the 2006 Israeli war on Lebanon⁹¹ and in the large scale military assaults on Gaza in 2009, 2012 and 2014.⁹² During the 2014 attacks on Gaza, company personnel worked closely with military units, and the company used the 'success' of its systems, in particular Iron Dome, to raise 450 million NIS in bond issuance from institutional investors.⁹³

As the general manager of IAI's Military Aircraft Group Moshe Levy told the Israeli financial newspaper Globes:

*“Utilizing our systems for agricultural Applications is a good example on [sic] how we look to commercialize our knowhow to broaden our offering. IAI offers the capability to combine military technologies with commercial applications on top of IAI's unique ability to fly UAV's in the civilian air space. I welcome the collaboration with Santos Lab, which is bound to open additional opportunities for us”.*⁹⁴

One such additional opportunity materialized in August 2019, when the company was awarded a 1 million USD project for large-scale precision agriculture UAV and hyperspectral imaging solutions by the Binational Industrial Research and Development (BIRD) Foundation, together with the US-based Headwall Photonics, a manufacturer of spectral instrumentation for remote sensing and defense markets.⁹⁵

90 Ibid, 120

91 Shaham, Nadav. [A decade to Shoval: Shoval system personnel remember the past and look to the future](http://bit.ly/35pvVMZ). *Bamahane* (Israeli military magazine). <http://bit.ly/35pvVMZ>

92 Eliyahu, Avi and Bashevkin, Natan. [Top Secret: This is where the Israeli aircrafts that spy all over the world are manufactured](http://bit.ly/2MBqUMX). Mako, 10 January 2013. <http://bit.ly/2MBqUMX>

93 Orpaz, Inbal and Teig, Amir. [A peek into one of the world's most advanced companies: Israel Aerospace Industries](http://bit.ly/35u26iF). *TheMarker*, 3 October 2014. <http://bit.ly/35u26iF>

94 Globes Correspondent, [IAI teams with Brazil's Santos on precision agriculture drones](http://bit.ly/33qPQNW). *Globes*, 9 January 2019. <http://bit.ly/33qPQNW>

95 Headwall, [Headwall & Israel Aerospace Industries \(IAI\) Awarded Contract for High-Endurance Fixed-Wing Hyperspectral Imaging UAV for Wide Area Precision Agriculture](http://bit.ly/33kuamC). Press Release. 1 August 2019. <http://bit.ly/33kuamC>

Conclusion

In a reality of systematic de-development of Palestinian and Syrian agriculture and land grab by illegal settlement agricultural enterprises, slogans like Netafim's 'Grow More with Less™' and claims about supporting farmers and promoting a sustainable future, ring hollow.

As this report has shown, the Israeli agritech sector is deeply complicit in the Israeli settlement enterprise, the strangulation of Gaza and the broader military apparatus of prolonged occupation.

Increased global interest in agricultural technologies presents new opportunities for Israeli agritech and military corporations alike to greenwash their occupation-related activities, crafting a positive 'green' image and deflecting from their role in perpetrating human rights violations. For military companies, adapting military technologies for civilian use in the global agritech market offers immense economic and political gains. Such commercial adaptations simultaneously enable them to penetrate new and lucrative international markets and confer a newfound legitimacy on technologies of repression, conceived in the context of belligerent occupation and tested on an occupied Palestinian population.

In conclusion, while agritech solutions may have a positive role to play in a world increasingly marked by extreme climate variability and the attendant challenges to agricultural production, food security and rural livelihoods, in the Israeli context, they serve to strengthen the expansion and economic prosperity of illegal settlements, contributing to policies and structures of expropriation, exploitation and dispossession.

WHO
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