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EL FUTURO DE LA ALIMENTACIÓN Y RETOS DE LA AGRICULTURA PARA EL SIGLO XXI:

Debates sobre quién, cómo y con qué implicaciones sociales, económicas y ecológicas alimentará el mundo.

THE FUTURE OF FOOD AND CHALLENGES FOR AGRICULTURE IN THE 21st CENTURY:

Debates about who, how and with what social, economic and ecological implications we will feed the world.

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The war on Yemen and its agricultural sector

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Criticism and comments are welcome

Different regions of our world are integrated into the flows of global capital (and hence valued as totalities) in distinct ways. South West Asia (and to a lesser extent the adjoining parts of North Africa) are valuable to global capital primarily in two interlinked forms: the nexus of the oil-dollar and the expansion (and concentration) of military stock.

It is thus hardly surprising that the region is almost absent in discussions of agrarian studies and food sovereignty. Yet incorporation of the region in such debates may be politically salutary for the links it reveals between food systems and economies built on fossil-fuels, less in terms of today's industrial food production, as in the above-mentioned core forces of imperialism today.

In two earlier papers, written with agronomist colleagues, we analysed the conjoined impact on local food production of Yemen's integration within regional oil-dollar economies from the 1970s and of increasingly internationally determined economic policies from the 1980s.¹ I shall draw here on the second of those papers to give a background to an analysis of the impact of the present war, now in its third year, on Yemen's agricultural sector and food system more widely. After that I shall turn to a reading of the exposure of the agricultural sector in the war since March 2015.

Background to the war: Yemen's food production sector since the 1970s

If today the food crisis/looming famine in Yemen is considered the worst in the world, this is not solely the result of the war. In 2012 the World Food Programme (WFP) stated that "ten million Yemenis, nearly half of the population, were food insecure."² Food insecurity was described as primarily a rural problem

¹ M. Mundy, A. al-Hakimi, F. Pelat, 'Neither security nor sovereignty: the political economy of food in Yemen', in Z. Babar and S. Mirgani (eds.) *Food Security in the Arab World*, London, Hurst and New York, Oxford University Press, 2014, pp. 137-159. M. Mundy and F. Pelat, 'The political economy of agriculture and agricultural policy in Yemen' in N. Brehony & S. AlSarhan (eds.), *Rebuilding Yemen: Political, Economic and Social Challenges*, Berlin, Gerlach Press, 2015, pp. 98-122. Both are available in Arabic: <http://www.athimar.org/Article-73> & <http://www.athimar.org/Article-74>.

² World Food Programme (WFP), 'The State of Food Security and Nutrition in Yemen: Comprehensive Food Security Survey,' 2012, 18. See also Figures 1 and 2 of the International Food Policy Research Institute (IFPRI) and Ministry of Planning and International Cooperation, Yemen, 'Yemen National Food Security Strategy: 1 Overview and Action Plan,' 2011. This is a policy paper for estimates of food insecurity in 2009, showing large areas of the country with 40 percent severe food insecurity and 60 percent or more stunting in children, pp. 2-3.

concerning 37% of the rural population.³ From the end of 2011, Oxfam and the WFP were calling for the supply of emergency food aid to upwards of one quarter of the population.⁴ In the wake of the economy's shrinking by 11% in 2011, the overall agricultural sector had been particularly affected by the shutting down of basic supplies and the shortage of inputs – with an estimated drop in output of 16%. Clearly there is no indigenous short-term solution to food insecurity in Yemen in sight: food aid is required. But it is telling that the food aid will be, in the WFP's packages, 100% wheat grain in a country where sorghum, millet and barley were, until the 1970s, the staple grains, wheat being used for special dishes.

The scale of the 2011 protests in Yemen should not be forgotten: Marieke Transfeld has argued that they were in absolute terms the largest in the Arab World.⁵ Whether that is true or not, with people marching on foot from Taiz and al-Hudaïda to Sanaa the protests sought to unify the city and the countryside symbolically in a manner seen in no other Arab state. From March 2011 onwards, the 'international community' engaged in negotiating a settlement to the political challenges, the broad lines of which were drawn up as early as April 2011. This entailed political and legal adjustments but left basic economic policy, and agricultural policy in particular, completely outside the discussion.⁶ Hence, I shall close this long background section below with thoughts on the nature of change in policy required to address to the structural problems in rural production outlined below and the relation of such economic policy change to the unanswered demands for greater political participation and social justice expressed in the protests of 2011-12 and again in the movement which emerged in 2014.

The importance of Yemen's rural society: first, Yemen's population remained into the second half of the twentieth century a very rural one: some 85% of the population lived in small villages (or tents) throughout the country as late as the 1970s. Second, as a mountainous country with irregular and at times torrential summer rainfall, the production of people and food over the centuries meant

³ Quoted from the GAFSP Project Proposal for Yemen ("Republic of Yemen, Proposal for Yemen: Smallholder Agricultural Productivity Enhancement Program, Phase One Roll Out of National Agriculture Sector Strategy [NASS] for Yemen's Efforts towards Achieving Food Security under Global Agriculture and Food Security Program, Sanaa, June 2013"), 4, in "1.1 Objectives and indicators" section. See for GAFSP:

<http://www.gafspfund.org/sites/gafspfund.org/files/Documents/4.%20Yemen%20Proposal.pdf>

⁴ Ashley Jonathan Clements, "Yemen: Fragile Lives in Hungry Times," Oxfam Briefing Paper No. 152, September 2011 and World Food Programme (WFP), *The State of Food Security and Nutrition in Yemen: Comprehensive Food Security Survey*, 2012.

⁵ "What had begun as small protests in January 2011 developed into a full-fledged, countrywide, popular uprising that lasted for ten months. In absolute terms, of all the countries participating in the Arab Spring, Yemen had the largest protests by far." Marieke Transfeld, "Yemen's GCC Roadmap to Nowhere: Elite Bargaining and Political Infighting Block a Meaningful Transition," German Institute for International and Security Affairs, 2014, 7.

⁶ Although the degree of outside management of the political change appears exceptional in the case of Yemen, as Georges Corm noted, the political transitions in other Arab states have also not entailed discussion of major change of social and economic policy: 'During the wave of Arab uprisings, Arab and International media limited their focus to the issue of democracy and personal freedoms. Absent from the analysis of revolutionary matters was any indication of the ways and means to reach a renewed developmental style, independent from the neoliberal model popularized by international, regional, Arab and Islamic financial institutions. To our knowledge, no political party, be it Islamic or secular, has been seen to highlight this key issue in its programme and slogans so that the Arab revolutions could reach safe ground.' See Georges Corm, "The political Economy of Democratic Transition in the Arab Situation," *Contemporary Arab Affairs* 8, no. 1 (2015), 22.

human (and animal) work to make the land that rendered life possible.⁷ Yemen's sculpted landscape makes a mockery of the notion of 'the conquest of nature'.⁸ And it invites reflection on the absurdity of imposing international 'market value' on Yemeni agriculture in abstraction from this elementary reality. In the rural sector of Yemen the very land of Yemen is at stake.

Concern with Yemen's rural capital thus is not a sign of nostalgia: human knowledge and crafting of physical resources for life have literally built rural Yemen. This physical capital is all the more precious given that the process of the subjection of peasant agriculture to the capitalist economy ('primitive accumulation') has in Yemen worked to destroy that capital, not to maintain it for capitalized extraction of profit. Capital accumulation has drawn rather on oil-rent (both that from Yemen's own fields and transfers from its richer neighbours), cash remittances from Yemen's migrant male labour force, and the mining of deep fossil aquifers for perishable market crops.

The trajectory of change in the structures of agricultural production

Today's Republic of Yemen was born from the union in 1990 of the former southern People's Democratic Republic of Yemen (established 1967) and the northern Yemen Arab Republic (established 1962). The south has much smaller areas of rainfed agriculture than the north, but unfortunately a detailed breakdown of land-use between the two former states is not available in the published national statistics and on which recent development interventions draw. The quality of statistics remains an issue, there being no systematic land registration throughout most of the country that could reveal holding sizes with reliability, be they the distribution of ownership or the size of tenant farm holdings.⁹ Yemen has no decennial agricultural census such as Egypt has had since 1929, a tool vital for charting trends in the rural sector. The millions (and soon billions) of dollars expended on rural development projects were decided without systematic statistical knowledge about the structures of farming units and their regional diversity, a necessity for responsible planning and policy debate. Rather such projects presumed that they were in the business of 'knowledge transfer' to Yemen so presumably did not need to prioritize Yemen's development of knowledge of itself. Indeed before the war, with the neo-liberal policies governing the state in Yemen, obtaining such rainfall statistics as there were required payment to the authorities that hold the same.¹⁰ With these caveats, let us here examine what the statistics reveal about overall trends in agricultural production.

Between 1975 and 1990 the rain-fed terraced area was halved, mostly due to the abandonment or destruction of terraces following a simultaneous increase in the relative cost of production and decrease in the market value of major grain

⁷ This is what van der Ploeg terms coproduction of farming and nature in landscape: see Jan Douwe van der Ploeg, *Peasants and the Art of Farming: A Chaanovian Manifesto* (Halifax, Fernwood, 2013), 48–49.

⁸ Compare Neil Smith, *Uneven Development: Nature, Capital and the Production of Space* (Athens: University of Georgia Press, [1984] 2008).

⁹ Jens Kanbeck, "Land Disputes in Yemen," in *Why Yemen Matters: A Society in Transition*, ed. Helen Lackner (London, Saqi Books), 200.

¹⁰ We are grateful to Helen Lackner for her careful comments on our paper and for noting on this point that 'payment for data is the case for everything'. It would seem that neo-liberal economic policy also entails the commercialisation of the knowledge production of the state.

crops (sorghum and barley) in the face of doubly subsidized imported wheat, loss of labour consequent to young male outmigration during the boom years (1973-1991) of Saudi Arabia, a very limited transformation of rain-fed into irrigated lands and an expansion of qat cultivation on rain-fed land. Male mobility also led to a new division of labour that left to rural women an ever greater part of agricultural labour, although the changes in the division of labour remain unrecorded.

The focus of investment was on irrigated agriculture. The 1970s and 1980s saw the development of unprecedented and unregulated private and public investments in well-drilling that served to irrigate flat and mechanizable lands on both coastal lowlands and the dry upper plateaux of the country below terraced escarpments. Investment in groundwater-dependant irrigated agriculture on the plateaux and the coastal plains has resulted in overexploitation and depletion of the aquifers, challenging the very underpinnings of this intensive agricultural economy and even the future of cities such as Sanaa, the capital.¹¹ The major coastal spate-irrigated wadis saw international development agencies led by the World Bank, offer contracts to international companies for building expensive diversion structures with imported technology in the upper reaches of the flood plain of the wadis.¹² By contrast, the April 2014 newsletter of the 'Spate Irrigation Network', a consortium that spans Yemen, Ethiopia, Pakistan and India, contains a paper on the design of weirs and diversion structures by an Indian engineer for the instruction of Yemeni engineers.¹³ The designs concern medium-technology structures, just like those rejected in the late 1970s and early 1980s by the World Bank and its Arab fund partners in favour of permanent high-tech diversion structures built by international contractors, all justified in terms of increasing productivity and production of high-value market-oriented crops for export (to Saudi Arabia) and Yemeni urban markets. These structures both consolidated inequalities and bequeathed a harsh legacy in terms of their maintenance requirements, which are rarely adequately met today.¹⁴

The consensus of informed opinion is that over the longer haul, the expansion of cash-cropping has increasingly benefited only a minority of internationally networked wealthy farmers, politicians and businessmen.¹⁵ Irrigation has permitted an increase in the production of fruit and vegetables for

¹¹ For recent publications on the water crisis and its political causes, see: Milan Karner, "Water Scarcity and Human Security in Yemen, **Assessing the Causes and Consequences of Yemen's Water Crisis**," 2014, <http://mei-nus.com/publications/middle-east-perspectives/water-scarcity-and-human-security-in-yemen> and Matthew I. Weiss, "A Perfect Storm: The Causes and Consequences of Severe Water Scarcity, Institutional Breakdown and Conflict in Yemen," *Water International*, 2015, accessible at <http://www.tandfonline.com/doi/full/10.1080/02508060.2015.1004898#.VNI4Fy4Rrl4>.

¹² See Martha Mundy, Tihama II Project: Monitoring and Evaluation Report, Ministry of Agriculture, Yemen Arab Republic, and World Bank/Kuwait Fund, 1980 and "Agricultural Development in the Yemeni Tihama: The Past Ten Years," in *Economy, Society and Culture in Contemporary Yemen*, ed. B. R. Pridham, 22-40 (London: Croom Helm, 1985).

¹³ April 2014 edition of the Newsletter of the Spate Irrigation Network (www.spate-irrigation.org/spate-irrigation-network/) contained a link to <http://spate-irrigation.org/wp-content/uploads/2014/04/Quick-Start-Design-Manual-for-Spate-Works.pdf>.

¹⁴ See more generally, Frank van Steenberg, Philip Lawrence, Abraham Mehari Haile, Maher Salman, and Jean-Marc Faurès, Guidelines on Spate Irrigation, FAO Irrigation and Drainage Paper No. 65 (Rome: FAO, 2010).

¹⁵ In the final NASS document to be discussed below, Republic of Yemen, Ministry of Agriculture and Irrigation, *A Promising Sector for Diversified Economy in Yemen: National Agricultural Sector Strategy 2012-2016*, March 2012, 13-14, it is written: "In the highland and coastal plains, the land tends to be owned by large land holders, and small farmers are interspersed among large farms." The source of this information and the problems posed to agricultural planning by the poverty of land tenure data in the absence of land registration and of an agricultural census is not made clear. See also note 28 below.

export and for the growing city markets as well as of qat for national consumption.¹⁶ It is impossible to document exactly how such changes have impacted the distribution of land tenure given the absence of reliable land tenure data.¹⁷

To return to the overall pattern of changes in crop production,¹⁸ we see a sharp decline in the production of grains between 1970 and 1980 followed by a further gradual decline until 2000. Pulses likewise suffer a relative decline. Qat alone increases notably. Fruit and cash crops do relatively well, although there are changes in the types of fruit crops.¹⁹

The area planted with grains decreased by 27 percent between 1970 and 1980. Since then, the decline has slowed, but with differences between one cereal and another. According to the World Bank, barley production was halved between 1970 and 1975 alone, from 126,000 tons in 1970 to 64,000 in 1975. Sorghum and millet, taken together, peaked in 1975 to decline until the early 1990s. Alongside the standardization of diets on global models,²⁰ and in the wake of governmental attempts to introduce high water-demand seeds of “improved” varieties, wheat alone saw an increase in area planted, gaining 56,000 hectares between 1970 and 1990 when, overall, grains lost more than 230,000 ha. Nevertheless, sorghum has remained the first cereal cultivated, as it provides both grain for the family and, given its drought resistance and ability to ratoon, the bulk of indigenous fodder for livestock. Although the areas planted in sorghum were roughly halved, the fact that sorghum continues to be planted owes as much to its value as fodder as for its value as grain, as well as to the exceptional adaptation of its land races to difficult local conditions.²¹ As rain-fed crops, neither sorghum nor millet has been the object of support from government or international agencies.

Animal production contributes some 28 percent to the total production income for the agricultural sector in Yemen.²² But beyond such a gross statistic, there is little information to allow an overview of this very important sector.

After the rapid reduction of the area of rain-fed cultivation with many households abandoning tiny remote and scattered fields within a few years,

¹⁶ In Martha Mundy, Amin al-Hakimi, and Frédéric Pelat, “Neither Security nor Sovereignty: The Political Economy of Food in Yemen,” in *Food Security in the Arab World*, ed. Zahra Babar and Suzi Mirgani, 137–59 (London: Hurst, 2014), we discuss, in some detail, change in the nature of fruit crop production, a secondary but important aspect of the agrarian transformation.

¹⁷ World Bank, *Republic of Yemen: Country Social Analysis*, 2006, 15–16 describes trends towards increasing concentration of land ownership in Yemen but once again cannot provide much data.

¹⁸ The sources for the statistics given here are Yemen’s Ministry of Agriculture and Irrigation (MAI) agricultural statistics for the period 1997–2009 and World Bank, “Republic of Yemen Agricultural Strategy Note,” Report No. 17973-YEM, 1999. It should be noted that the data available from the World Bank, “Agricultural Strategy Note,” concerns only total tonnage for 1970–1996, not area, for barley, sorghum and maize. Furthermore, the data for 1970–1996 combines sorghum and millet as if a single crop, entered together on Figure 2. Nevertheless, this data has been incorporated here. The agricultural statistics published annually by the Ministry of Agriculture and Irrigation group crops into: grains, pulses, vegetables, fruit, qat, and cash crops (excluding qat, fruit, and vegetables).

¹⁹ For a fuller discussion of changes in cropping patterns, see Mundy et al., “Neither Security nor Sovereignty.”

²⁰ See Philip McMichael, *Food Regimes and Agrarian Questions*, Halifax: Fernwood, 2013.

²¹ A landrace is a domesticated, regional ecotype; a locally adapted, traditional variety of a domesticated species of animal or plant that has developed over time, through adaptation to its natural and cultural environment of agriculture and pastoralism, and due to isolation from other populations of the species. (Wikipedia definition)

²² Yemen Ministry of Agriculture and Irrigation, *Agricultural Statistics Year Book 2007* (Sanaa: General Department of Statistics and Documentation, MAI, 2008).

cropping statistics indicate that since the late-1990s rainfed farming came to represent an economic insurance for many families. Families conserved some farmland to be brought back into cultivation when an “urgent crisis” or an “opportunity” takes farmers back to their fields. At this point, the farmers then face the consequences of recent policies: insufficient stocks of local seeds, forgotten knowledge, dislocated community cooperation, and degraded terraces. To what extent such farmers are today women rather than men likewise remains undocumented.

It might be thought that such strategies would be central to families coping during the present war, but as we shall see in the last section of this paper, life is heavily disrupted by bombardment in many rural areas.

Yemen imports more than 75 percent of the cereals it consumes whereas in 1970 the figure was 18 percent.²³ In 2009 of the cereals grown in Yemen, 55% by weight, 60% by area sown in cereals, was sorghum; sorghum together with barley and millet formed 69% of cereal production by weight, 80% by area.²⁴ But in the same year wheat formed 74% of the cereal components of the Yemeni diet.²⁵ By 2011, 93% of national wheat requirements were imported.²⁶ This situation was not unpleasing to former President Ali Abdullah Saleh whose close relatives controlled the major importing and distributing company, the Yemen Economic Corporation (YECO).²⁷ The rapid disconnection of social reproduction from local food production, taking place simultaneously with a paucity of public health provision (half of the Yemeni population had no easy access to health services before the war), the absence of a family planning policy, and an increasingly reactionary approach to women’s rights and education, have contributed to rapid population growth. Hence, although wheat production has expanded slightly, its overall contribution to domestic consumption has dropped, roughly from 8 to 4 percent of the estimated needs of the population.

²³ Abdel-Warith Hazza, “Wheat Production Trade and Nutritional Level of Yemeni Population,” *Yemeni Journal of Agricultural Research & Studies*, no. 19 (2009): 45–68. It is common the press to state that Yemen imports 90% of its food, often corrected to 90% of the cereals it consumes.

²⁴ These estimates are given in “FAO/WFP Crop and Food Security Assessment Mission to Yemen,” FAO, Economic and Social Development Department, December 9, 2009, Table 4, <http://www.fao.org/docrep/012/ak342e/ak342e00.htm>.

²⁵ Ibid., Section 4.2.

²⁶ The sources for agricultural statistics are either the Yemen Ministry of Agriculture and Irrigation year books or the WB’s reports. The quality of statistics is poor and should be taken only as rough indicators.

²⁷ YECO is the name for the former Military Economic Corporation (MECO), see Paul Dresch, *A History of Modern Yemen* (Cambridge: Cambridge University Press, 2000), 208. See also Sarah Phillips, “Yemen: Developmental Dysfunction and Division in a Crisis State,” Developmental Leadership Program Research Paper 14, 2011, where she writes: “The climate for foreign investment is further undermined by President Saleh’s insistence that the shadowy and unaudited Yemen Economic Corporation...be the local partner for prospective investors,” p. 27. In note 71, Phillips writes that “YECO was established in the early 1970s and was initially owned by all military servicemen who contributed to its start-up capital, but was usurped and used as a commercial arm of the regime in the mid-1980s. It has business operations in a wide array of industries including basic commodities and foodstuffs, non-lethal military supplies, furniture, textiles, pharmaceuticals, agribusiness, (unlicensed) commercial fishing, and real estate. Many Yemeni observers view the corporation as a vast criminal enterprise.” She also notes that “President Saleh used to be the head of YECO,” but that it is now run by Ali al-Kohlani who “is the brother of Ahmed al-Kohlani (former governor of Aden and now the Minister of Parliamentary Affairs), who is President Saleh’s father-in-law,” note 71, p. 27.

Agricultural policy since the 1960s

It is not clear that we can speak of an “agricultural policy” in the full sense of the word when the agricultural sector of North Yemen was opened to the world market during the civil war of 1962-71. It was only in the 1970s that governmental and civil institutions concerned with agricultural development were established in both the YAR and the PDRY. The two young states were to pursue very different policies with regard to land tenure, infrastructural investment, crop choice, and marketing. These earlier divergent policies continue to mark the two parts of the country unified since 1990.

Although its natural endowment for agriculture was even poorer than that of the north, the PDRY pursued land redistribution, forced cooperative association in agriculture, and dictated control of crop choice and marketing.²⁸ Notably, the government regulated and restricted the sale of qat.²⁹ After the 1990 unification of the YAR and the PDRY, agricultural policy, similarly to other policies, was unified on the model of the north. The policies of land redistribution and socialized marketing of the PDRY were cancelled, although farmers in irrigated zones in Hadramawt at the time resisted the wholesale dispossession required legally for the restitution of land to previous owners. Conflict over land is considerable as a result of appropriation of land by government officials from the north, allegedly illegally and sometimes forcibly, in the years after 1994.³⁰ Such practices – also described for other regions – are invoked today as one of the reasons for renewed calls by southerners for secession from the north.

In the north, with its considerably greater agricultural production,³¹ economic and agricultural policy has remained fundamentally unchanged since the 1970s. The only brief departure was during the years of President Ibrahim al-Hamdi (1974-77) who promoted agricultural cooperative association and developmental collective action in rural communities. Aside from this period, the policy, planned or not, basically accepted that the rain-fed sector of Yemeni agriculture, exposed to water shortage and with high labour inputs (largely outside the circuit of the market as domestically structured and heavily female), could be left to its own

²⁸ Helen Lackner, *P.D.R. Yemen: Outpost of Socialist Development in Arabia* (London: Ithaca Press, 1985), 171–88.

²⁹ Noel Brehony, *Yemen Divided: The Story of a Failed State in South Arabia* (London: I. B. Tauris, 2011), 71: “Under a law in 1977, qat could only be consumed at weekends and public holidays in Aden. In the qat-chewing area, Lahij and Abyan, it could be chewed at any time. It was banned in Hadramawt and Mahra, where at the time it was not widely consumed.” Qat (*Catha edulis*) is a shrub, the leaves of which when chewed have amphetamine with mild hallucinogenic qualities; it is not a narcotic.

³⁰ World Bank, “Republic of Yemen,” 15: “2.18 There is a trend towards inequitable distribution of land in Yemen, with ownership increasingly concentrated in the hands of a few influential families. 2.20 There is a trend towards increasing private appropriation of communal land.” And “2.23 In the southern governorates, in contrast, the holdings of large agricultural land owners are expanding at the expense of small farmers. After unification rampant land grabbing occurred, often by influential and powerful figures,” p. 16. It should be noted that calls to introduce comprehensive land registration in the unified Republic of the early 1990s were silenced by the 1994 war.

³¹ According to “A World Bank Country Study- People’s Democratic Republic of Yemen, A Review of Economic and Social Development, March 1979,” the total cultivated area was 76,985 ha in 1974, 65,678 ha in 1975, 83,344 ha in 1976 and 91,869 ha in 1977. (In the report figures were in acres, here converted into hectares.) By comparison in 1975 the figure for the North was 1,515,000 ha, i.e. according to these figures the cultivated area in the PDRY represented 4% of the total surface YAR+PDRY and North Yemen’s cultivated area was 23 times wider than South Yemen’s one although the total area of South Yemen was larger than that of the North (337,953 km² according to the same document). In South Yemen, in 1975, there were 25,678 ha of cereals other than wheat, 7,508 ha of wheat, and 11,340 ha of cotton.

devices. The focus was on zones where delivery of irrigation water could be assured for higher-value, market-oriented production. Until the beginning of the RALP project (Rainfed Agriculture and Livestock Project) in 2008, this basic policy emphasis barely changed, although the water deficit came to be among the most severe in the world.³² In so far as the issue was addressed, the emphasis was on lessening water loss in irrigated agriculture.³³

In terms of marketing, Yemen opened its market to imported foodstuffs, subsidized prices of imported grain and other basic foodstuffs on the local market, and refrained from regulating the marketing of produce, especially qat. Labour was encouraged to migrate to the oil-producing states, and it did in large numbers, especially in the years 1973 from to 1991, when following Yemen's vote in the UNSC upwards of a million Yemeni labourers were expelled from Saudi Arabia. In short, agricultural policy was effectively based on the premise that the arid and largely mountainous terrain of Yemen was incapable of producing high-quality grain crops, especially wheat, at prices competitive on the international market.³⁴ Under the guidance of the international development agencies, the focus turned to increasing higher-value agricultural produce from the coastal wadis for the markets of Saudi Arabia and of Yemeni cities more generally. By and large, this policy has been successful. If there has been "failure" in agriculture, this must be ascribed not to any tradition-bound rigidity on the part of farmers who have responded to the policy with myriad changes, but to the policy itself. Thus, further to the statistics with which this paper opened, it is reported that, between 1991 and 2003, areas planted in sorghum and barley declined, whereas those in qat, bananas, mangoes, citrus, and apples increased.³⁵ A 2009 UNDP report notes that the land planted in barley and maize halved between 1961 and 2003.³⁶ Far from stimulating local production of basic foodstuffs, labour remittances fostered consumerism on the Gulf models and supported a rise in food imports. The opening of the domestic market to unrestricted and subsidized food imports, in particular wheat, in order to cover the needs of a rapidly expanding population, inevitably made local production less competitive.

Over the 34 years of President Ali Abdullah Saleh's rule (and with expert international mediation by the late Dr. Abd al-Karim al-Iryani, the head of the first

³² Yemen Ministry of Planning and International Cooperation, "Yemen's Third Socio-Economic Development Plan," 64 notes "Total annual renewable water resources are estimated at 2.5 billion cubic metres (1.500 billion m³ of groundwater and 1 billion m³ surface water). However, total annual water consumption stands at 3.4 billion m³, reflecting a groundwater depletion rate of 0.9 billion m³ (138%) a year. On average, water tables in most aquifers drop by 6 metres a year, and are thus expected to run dry within 15-50 years...". Less pessimistic is the recent paper by Frank van Steenbergen, Omar Bamaga, and Adel al-Washali, "Groundwater Security in Yemen: Who Is Accountable to Whom?," *Law, Environment and Development Journal* 7, no. 2 (2011): 164, <http://www.lead-journal.org/content/11164.pdf>, which states some successes at the local level in regulating extraction from the aquifer by pumps and restrictions on the sinking of pumps.

³³ See for example the discussion below of the GSCP Groundwater and Soil Conservation Project that began in 2004 and Yemen Ministry of Planning and International Cooperation, "Millennium Development Goals Needs Assessment: Yemen Country Report," 2005.

³⁴ Yemen Arab Republic, "Final Report on the Airphoto Interpretation Project of the Swiss Technical Co-operation Service, Berne Carried out for the Central Planning Organisation, Şan'a," Zurich, 1978, 13, concerning the region of Turbah south of Taiz notes: "In 1977 some farmers reported that they have stopped the cultivation of wheat because imported wheat is much cheaper than that which is locally produced."

³⁵ Yemen Ministry of Planning and International Cooperation, "Millennium Development Goals Needs Assessment: Yemen Country Report," 2005.

³⁶ UNDP Regional Bureau for Arab States, "Development Challenges for the Arab Region: Food Security and Agriculture," vol. 2 (Cairo, 2009).

Yemeni government development agency, the Central Planning Office (CPO), and special advisor to President Abd Rabbuh Mansour Hadi, Saleh's former vice-president who took over as head of state in February 2012 for a term of two years in an election where he stood as the only candidate) a basic division of labour developed between the expansion of the Yemeni state as a security and military employer and the delegation to international agencies of policy and financing for the rural sector of the country.³⁷ The GCC agreement and meetings of the 'Friends of Yemen' confirmed this structural division of labour, the only evident change since the major protests of 2011 being the deepening USA engagement in the military and security organisation of the state. Thus, even at the level of what is publicly known about the budget of the Yemeni state, military and security allocations were further increased in 2014, the year before the war.³⁸ The Yemeni case thus provides close to a perfect example of the effects of the international development complex on an agrarian economy that, in the northern part of the country, was close to self-sufficiency in basic grains until the 1970s.

From the mid-1990s onwards, Yemen was subject to structural adjustment policies supposed to "fight Yemen's impoverishment". The International Monetary Fund demanded the cutting of consumption subsidies and public expenditures with the declared objective to "save public money for the benefit of job-generating and development-oriented investments".³⁹ Beyond rises in the prices of basic consumption goods and increased competition with local production, those measures led to popular riots – in 1998 and in 2005 – and increased poverty and unemployment. Structural adjustment plans were therefore combined with poverty alleviation programs. This became formalized in the framework of Poverty Reduction Strategy Papers, funded by the World Bank but also by wealthy Arab neighbours, in particular Saudi Arabia.

In the years before the war Yemen's agricultural policy increasingly became framed in terms of reduction of food insecurity and poverty alleviation. These categories allow for the agencies to engage with rainfed agriculture and degraded land after decades of neglect but without needing to review the contribution their earlier policies made to present problems. In the name of poverty reduction, the Public Works Project and the Social Fund for Development initiated cash/food distribution programmes in 1996 and 1997 respectively. These were further generalized in the National Agricultural Sector Strategy (NASS) issued just before the war. These programmes can be directed to support badly needed infrastructural work. But this is done in the name of poverty reduction and targets needy individuals (counted as such, with female 'beneficiaries' counted separately from male) without consideration of the history of degradation of infrastructure, the structure of ownership, and the patterns of access to resources. Alongside this humanitarian poverty-reduction agenda, development aid continues to be cast as 'assistance' to farmers so as to access better markets for products.

³⁷ See Mundy et al., "Neither Security nor Sovereignty."

³⁸ See the useful analysis of the 2014 budget by Muhammad 'Abduh al-'Absi, "Dirasa fi mizaniyyat al-dawla li-'am 2014, http://www.mohamedalabsi.blogspot.com/2014/01/2014_2298.html

³⁹ See Claire Beaugrand, "Une économie en perpétuel sursis," in *Yémen Le Tournant Révolutionnaire*, ed. Laurent Bonnefoy, Franck Mermier, and Marine Poirier, 179–200 (Sanaa and Paris: Cefas-Karthala, 2012).

NASS and the GAFSP project contain certain positive aspects: a recognition of the existence of rainfed agriculture as central to the livelihoods of the highland rural populations; the recognition, albeit only implicit, of a link between poverty and agrarian infrastructural degradation; a strong technical argument for the need to support livestock production; and an acknowledgement of the interconnection of agro-ecological zones in watershed systems. Yet, for documents written after the uprising of 2011, there is remarkable continuity with the policies promoted in earlier projects. There is no recognition that the neo-liberal policies have led to massive destruction of land, water resources and farmer's knowledge. It is worth reflecting on the issue of knowledge, the central form of capital in the interface between farming and nature. Knowledge has two aspects: that of farmers in their fields and herders in their pastures and that of a governing order, a state, which develops public policies to enhance the productive capacity of farming and animal husbandry. As we discussed earlier, from the 1970s the international development agencies treated the first as part of the "outdated" "traditional farming practices",⁴⁰ rather than as a resource, be it in terms of genetic stock or techniques for water harvesting, soil retention or seed reproduction. And the second was effectively never developed: no on-going census of farming structures, no on-going studies of land-use, no cadastral registration of land ownership, no banks of native genetic material, be it from plants or animals. Lastly, in the strategy documents discussed above, there is no recognition of the responsibility and history of international development interventions in Yemen and the relation of past decisions to the present dramatic crisis. Instead, there is continuity with previous projects with no historical chart of the actual interventions – a silence that itself is but another failure to produce knowledge about the rural world.

It would be easy to conclude that the policy objective has been to create dependence in the classic manner of development 'aid' functioning as a tool in the construction of an internationally articulated ruling class.⁴¹ Certainly the result of 'development' in Yemen has been primarily dependence. The dominant powers (and their tax payers) make substantial payments in 'aid'; yet at the level of the equation of capital flows, it has been shown that for every dollar of 'aid', almost three dollars left the country to 'safe havens'.⁴²

Yemeni youth activists opened a brief debate on the role of the aid industry in relieving Yemen's government of responsibilities, in guiding its economic policies, and in patronizing elites ill-placed to challenge fundamental inequality and dis-functionality. By contrast, the international 'solution' entailed increased militarisation and direct US and GCC management. In spite of political contestation, small farmers of the countryside, and their concerns, remained without representation in the making of state-policy.

⁴⁰ See previous note.

⁴¹ See Jason Hickel, "The Donors' Dilemma - Aid in Reverse: How Poor Countries Develop Rich Countries," <http://www.globalpolicyjournal.com/blog/12/12/2013/donors%E2%80%99-dilemma-aid-reverse-how-poor-countries-develop-rich-countries>.

⁴² "International aid flows to Yemen are dwarfed by outward capital flows, with tax havens facilitating capital flight. For every dollar spent on aid in Yemen between 1990 and 2008, another \$2.70 left the country." Ginny Hill, Peter Salisbury, et al., "Yemen: Corruption, Capital Flight and Global Drivers of Conflict," London, Chatham House, 2013, xi.

What is not said in all strategies is that the very basis of food production needs rebuilding and conservation; that such rebuilding can be done by local groups with government support; that women's rights to land can be built into such initiatives; that women form the backbone of small farming families; that small farming families are the guardians of bio-diversity; that knowledge of cultivation and water-harvesting methods, and of seed and animal types, can be strengthened through both local transmission and the introduction of scientific bio-banks; that a successful family planning programme requires both universal health coverage and less reactionary ideologies in the name of religion; that real estate construction is not productive 'industry'; that it is possible to regulate a market so as to permit qat sales on only certain days as was done in the PDRY; that inequality and the concentration of wealth are not God-given derivatives of the market or property itself but the result of public policy over many years; that such policy can be changed to restructure property rights; that government expenditure on the military and security (as with petrol subsidies) can be redirected to basic production; and that Yemenis need to take back their own government to such ends.

The above were lines that Frédéric Pelat and I wrote in 2014 and revised in early 2015 just days before the beginning of the war. There is not the space here to review the political developments of the year prior to the initiation of military hostilities in late March 2015. Two issues that have rendered difficult a clear picture of the war do, however, require mention.

First is the poor coverage of the war by Western media, reflecting not only the difficulty of access for journalists but above all the silence of international organisations concerning targeting and damage assessment. Following the withdrawal from Sanaa of Gulf and Western embassies in mid-February 2015 during the run-up to military action, the major international organisations departed or left only a skeletal staff. It was the NGOs, Oxfam and MSF, and among the human rights NGOs, HRW, which reported throughout.⁴³ Of the international organisations only the ILO undertook new work with the Central Statistical Office in Sanaa to produce an updated labour market survey in autumn 2015. Thus, what I have termed a development complex became in the course of the second year of the war a kind of government of humanitarianism in Yemen. In this capacity, those UN agencies qualifying as 'humanitarian' have been able to resume work gradually during the second year of the war and so to recover a voice echoed in the Western press.

Second is the general legal impunity which the Coalition, Saudi-led, and Western backed, appears to enjoy for its military campaign in Yemen. This was set enabled by the 'constructive ambiguity' of the legal drafting of UNSC resolution 2216; this effectively delegated UN Charter Chapter 7 powers to the Saudi- and Emirati-led, Western-backed Coalition as part of restoring Hadi's 'legitimate' government over Yemen.⁴⁴

⁴³ See their reports from early in the war: <https://www.oxfam.org/en/pressroom/pressreleases/2015-07-28/blockade-and-violence-yemen-pushing-additional-25000-people> ; <http://www.bbc.com/news/world-middle-east-32677260> ; <https://www.hrw.org/news/2015/05/03/yemen-saudi-led-airstrikes-used-cluster-munitions> .

⁴⁴ On the use of 'constructive ambiguity' in the writing of UNSC resolutions, see the presentation of Joy Gordon of September 18th 2016, <https://www.youtube.com/watch?v=q-sjyogAOtk&index=12&list=PLMdFKTfMSzdsvlG0UNH4i8eU56sE2aY6I> .

Targeting of rural Yemen in the war

As noted above, before the war the bulk of the country's population lived in dispersed villages and small towns,⁴⁵ and over half of the population relied in part or in whole on agriculture and animal husbandry. Sites of food production, villages are inevitably less 'visible' in media than the urban centres. And they are regions from which, as the ILO/CSO survey 7 months into the war tells us, two-thirds of the internally displaced came, leading to a loss of almost 50% of the workers in agriculture.⁴⁶

Data sources: when the Western embassies in Sanaa closed mid-February 2015 as part of the run-up to the war, the international agencies, including the Food and Agriculture Organisation, halted their support to Yemeni ministries in Sanaa (in what the head of the Cairo FAO office brushed off as a 'political decision'). Hence the specialised agencies have published little or nothing on the damage wrought.⁴⁷ Thus, in trying to fill the general, and internationally more disturbing information gap, we have drawn on two data sets: first, the data compiled by the extension officers of the Ministry of Agriculture and Irrigation (MAI) covering the period March 2015 – August 2016 and, second, data from the Yemen Data Project (YDP) which covers strikes from March 2015 to date.⁴⁸ Essentially the two corroborate each other; the YDP data reveal that the lists from the MAI are indeed conservative. We are presently working on their relation and how best to use the YDP data. Please note that the MAI data is of targets and not a damage assessment *per se*; the MAI did produce a damage assessment report on the facilities belonging to the Ministry, but I am not discussing that here.

First what has been the periodicity of the strikes? The trends of the MAI data are coherent with those of the YDP data. There were strikes on civilian targets from the outset, but whereas military targets were more frequent than civilian through September 2015, in what I shall term a first stage of the war, for 5 of the 6 months from October 2015 to March 2016 civilian targets outstripped military. And in 10 of the 18 months between March 2015 and August 2016, the number of civilian targets recorded by the YDP was over 200. In short the second phase of the war focused on civilian beyond or equal to any military targets. In this paper I write of agriculture but it should be remembered that cultural heritage (museums, historical buildings, mosques and mausoleums), educational establishments particularly technical colleges, and hospitals were likewise targeted in the same second phase of the war.

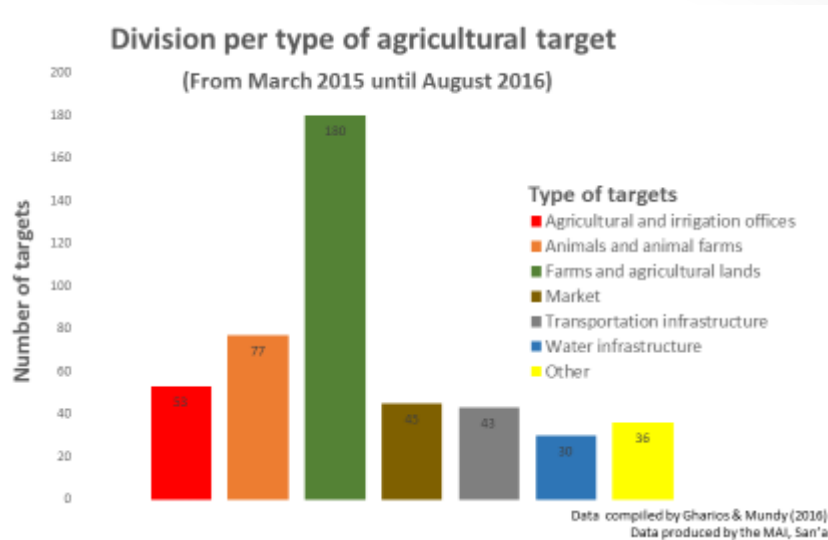
⁴⁵ FAOStat gives the figure 65% of the population: <http://www.fao.org/faostat/en/?#country/249>.

⁴⁶ http://www.ilo.org/wcmsp5/groups/public/---arabstates/---ro-beirut/documents/publication/wcms_501929.pdf.

⁴⁷ There are specialised units for the compilation of such data. The Global Facility for Disaster Reduction and Recovery in the WB declared its work inside Yemen closed. The major agencies (UN/WB/EU/IsIBD, the last 40% Saudi owned) formed a partnership for Yemen for the purposes of a Damage Needs Assessment. In late April 2016 its officials were asked why in a country such as Yemen their work focused on four cities, they answered that in a month's time the second stage would begin to cover rural areas and justified the urban focus in terms of cost efficiency. (See <http://journal.georgetown.edu/assessing-structural-damage-in-yemen-five-minutes-with-andrea-zanon-and-philip-petermann-2/>) On May 6 2016 a briefing was made on the preliminary report by this partnership, but the whole was not released publicly.

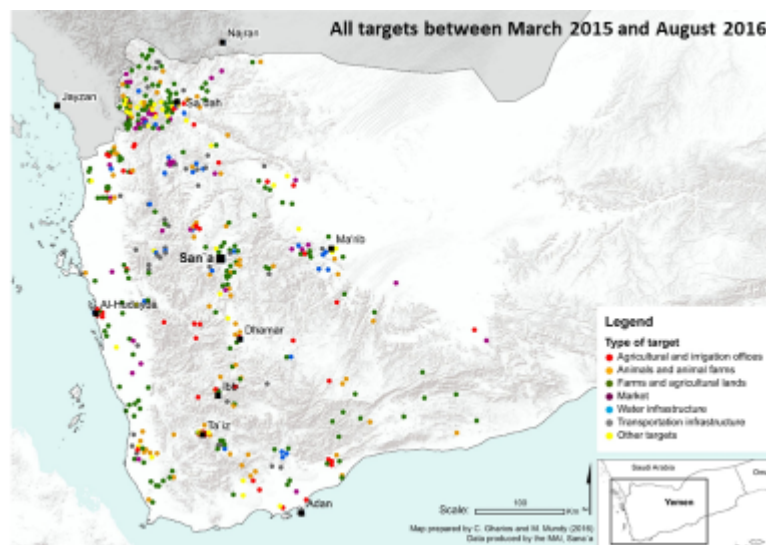
⁴⁸ Lists are available on <https://yemenspring2015.wordpress.com/2016/02/>. See the site of the YDP: <http://www.yemendatapoint.org/data/>.

Of agricultural targets, what did the Coalition target?



Agricultural land was the target most frequently hit but the other components of rural life were also targeted.⁴⁹ According to FAOStat agriculture covers less than 3% of Yemen's land, forests 1%, and pastures just under 42%. In short to target agriculture requires a certain aim.

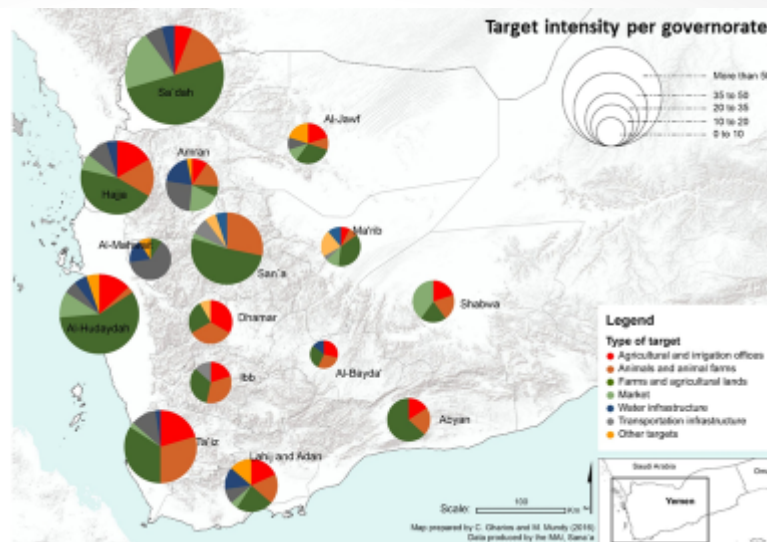
Placing the total targets on a map of Yemen produces this image.



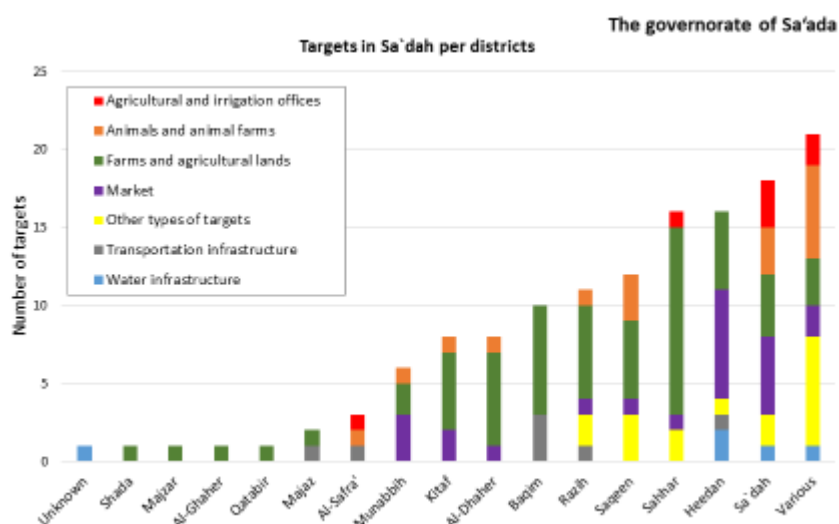
As is evident from the above, Sa'dah governorate has been particularly heavily targeted, the Saudi military spokesman al-Asiri having declared the whole province a military target six weeks into the war.⁵⁰

⁴⁹ It should be noted that we are concerned with the MAI data and that the Coalition also targeted cultural heritage heavily in the same period of the war.

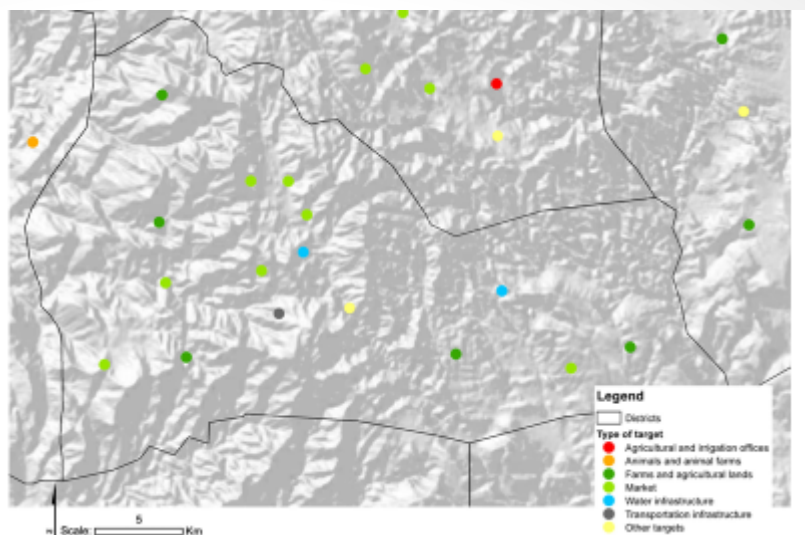
⁵⁰ <http://www.aljazeera.com/news/2015/05/yemenis-ordered-leave-saada-province-150508145754277.html>



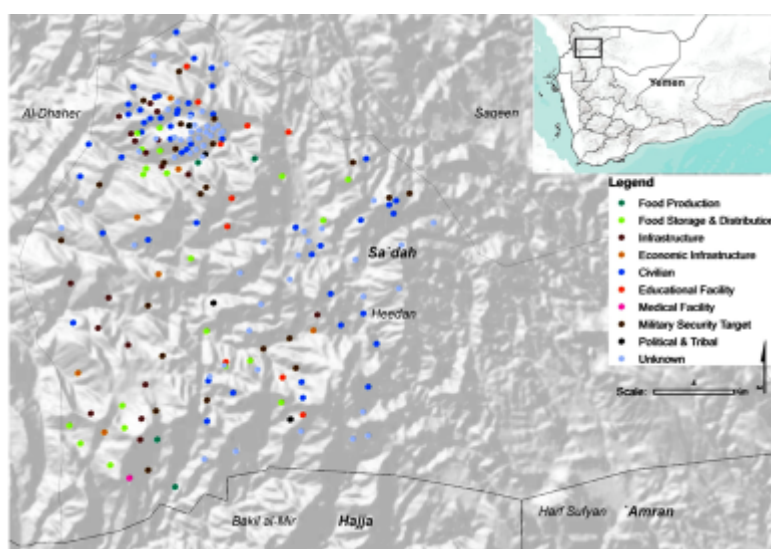
For Sa'dah the targeting of objects indispensable to survival of rural residents appears systematic.



We are now carrying out tests relating and mapping the two data sets for small areas. If we map the MAI data on the small area of the district of Haydan, Sa'dah Governorate, we see strikes that cumulatively disrupt agricultural life.



We are working on combining the MAI data with the more up-to-date YDP data, here as last image a working mapping of the two data sources for the same small district of Haydan. (Apologies for the slight difference in scale of the two maps and for Haydan appearing as Heedan on the working map below.) Haydan is a truly rural area with a population count of 4,773 in the 2004 census and estimated population just before the war of just under 6,500 persons.⁵¹



There are perhaps two conclusions to be drawn.

First, placing the rural damage alongside the targeting of food processing, storage and transport in urban areas, we find strong evidence that Coalition strategy has aimed to destroy food production and distribution in the areas which Ansarallah (the Houthis) and the General Congress Party control.

Second, this level of destruction of a society of 'family farming' is unquestionably a war crime. Unlike the USA, Yemen, Saudi Arabia, and the UK (which has moved up to the second rank of global arms sales thanks to this war) are signatories to the 1977 Protocol additional to the Geneva Conventions, which gives the fullest statement in IHL on the protection of objects indispensable to the

⁵¹[https://ar.wikipedia.org/wiki/%D8%AD%D9%8A%D8%AF%D8%A7%D9%86_\(%D8%B5%D8%B9%D8%AF%D8%A9\)](https://ar.wikipedia.org/wiki/%D8%AD%D9%8A%D8%AF%D8%A7%D9%86_(%D8%B5%D8%B9%D8%AF%D8%A9))

survival of the civilian population.⁵² To stand up in a court of law, a further level of validation in the form of what the military term a 'battle damage assessment' would be desirable. But in a region of the world most valued as terrain for military development, what court of law would admit such a suit given the identity of its perpetrators?

Wars, and above all this war, are forms of experimentation. Damaging agriculture and controlling food imports have long formed part of the arsenal of techniques employed against the much smaller territory of Gaza. Here the experiment is on a larger scale with many different parties engaged in the fray. In the last months the war appears to have entered a third phase focused on a Coalition attempt to take the coastal plain (Tihamah) with its ports, especially the port of al-Hudaydah through which most food imported passes, and to use control of the banks and government salaries (not paid in over six months) to bring the north economically to its knees. That one is into a new phase of the war was expressed by an official of the MAI when asked in March whether the Ministry had continued to log damage to agricultural infrastructure beyond August 2016: 'no, all has already been bombed'.

In a longer-term perspective, it appears that this war, prosecuted by countries in which oil, armament, and the dollar loom so large, through utter devaluation of Yemen's rural human and animal labour, aims to deny it forever an existence as a political actor in the region.

⁵² Article 54 of the Protocol additional to the Geneva Conventions:

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

Nazioarteko Hizketaldia

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