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"There Should Be No Life": Environmental Perspectives on Genocide in Northern Iraq

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ABSTRACT

This article examines the natural environment during the Kurdish genocide in northern Iraq. The genocide killed between 50,000 and 180,000 people and destroyed some 4,500 Kurdish villages from the 1960s to 1980s, reach peak violence during the Iran-Iraq War (1980–88). The paper uses American, British, and Iraqi archival documents to analyse how the violence affected the natural landscape and how ecological conditions constrained the violence. Iraqi leaders regarded dams and other modes of environmental engineering as levers to facilitate agricultural modernization and social integration. Protecting and projecting hydraulic power justified greater military exertion. Iraqi leaders, frustrated by the lack of progress in development and hostile to the claims of Kurdish nationalism, resorted to more coercive options to combat guerrillas. But the inadequacies of military exertion prompted the government to redouble efforts to tame unruly nature and those who dwelled in it. This escalation contributed significantly to the lethal violence against rural Kurdish society. At a theoretical level, these findings highlight the troubling ways in which policies aimed to improve environmental conditions fold into campaigns of mass violence. The article also adds to understanding of violence in Iraq, showing how Iraq's attempts to use environmental engineering for development intersected with security concerns and ethnic marginalization to create more intensive repression.

KEYWORDS

- Iraq
- Kurds
- insurgency
- genocide
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- ~~dams~~**[Q2]**

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Studies of genocide increasingly consider ecological components of mass violence. Mass violence and genocide transform environments and ecosystems deliberately and inadvertently. At the same time, environmental factors − terrain, flora, and fauna − influence and constrain the activities of perpetrators and victims. Recent scholarship explores the environmental impacts of the Armenian and Cambodian genocides and the Holocaust.[1] Some fear that such focus on the natural landscape distract from human suffering.[2] Proponents, however, argue that considering environmental factors helps expand the field theoretically and empirically.[3]

This article examines the natural environment in the Kurdish genocide of northern Iraq. The genocide killed between 50,000 and 180,000 people and destroyed some 4,500 Kurdish villages from the 1960s to 1980s. The most intense violence occurred during the Iran-Iraq War (1980–88) and the ensuing counterinsurgency campaign (1988–89). The article uses American and British diplomatic correspondence, as well as archived Iraqi government documents and audio recordings of leadership deliberations from the Conflict Research Record Center's Saddam Hussein archive.[4] None of these materials were created to comment on ecology. Their frequent passing mention of the natural landscape, however, offers an opportunity to read with an ecocritical lens that foregrounds environmental conditions.[5] This helps further elucidate the environmental transformations that occur in the course of mass violence.

The article argues that efforts to alter the landscape of northern Iraq, especially through hydrological engineering, played a key role in intensifying and escalating killings of Kurds. Iraqi leaders regarded dams and other irrigation infrastructure as levers to facilitate agricultural modernization and social integration. As their development plans met resistance and faltered, Iraqi leaders resorted to more coercive options. Protecting and projecting hydraulic power justified greater military exertion. The inadequacies of military exertion prompted more commitment to tame unruly nature and target Kurds, particularly in rural areas.

The article makes several important contributions. First, the article offers insights into the troubling connection between mass violence conducted during counterinsurgency campaigns, ecological degradation, and socioeconomic development. Subordinating nature to human needs is a key premise of development programming. This can lead unintentionally to ecological spoilage and population displacement. Counterinsurgency piggybacks on the impetus for development. Governments repurpose policies aimed to foster modernization in order to punish recalcitrant populations, pushing environmental alteration to radical extremes. Ecological devastation amplifies population-centric violence. Victims have fewer means to cope in landscapes bereft of resources.

The article also adds to understanding of violence in Iraq. Violence has been central to the historical process of state formation in Iraq, especially under the Ba'th regime of Saddam Hussein.[6] The genocide in Iraqi Kurdistan has become encoded symbolically and legally as an act of sectarian violence perpetrated by Saddam Hussein and the Ba'th. The preamble to Iraq's 2005 Constitution, for example, lists massacres of the Kurds among a litany of instances of "racial oppression" (*al-qama' al-qawmi*). This tendency to view violence solely as a product of Iraq's ethnic cleavages, however, elides factors like ecological stresses and socioeconomic exclusion that also elicit violent responses.[7] Iraq's development planning relied on intensive alterations in the natural landscape even before Saddam Hussein and the Ba'th era. Likewise, prior Iraqi leaders treated development as a tool for military pacification. The Ba'th regime embedded development in the service of counterinsurgency, enhancing its destructive capacities. The development-inspired environmental alterations of the 1960s and 1970s softened the ground, figuratively and sometimes literally, for killings in the 1980s. Yet even in the act of suppression and destruction, the Ba'th maintained hopes to transform Kurds into model Iraqi citizens. Ethnic exclusion combined with the regime's overconfidence, insecurity, and indifference to the fate of civilians to driving the genocidal violence over multiple decades.

Explaining Landscapes of Ashes of Mud

Genocide studies, as a field focused on the causes and consequences of human violence, has only recently considered how violence against people relates to destructions of ecosystems. Work in a number of disciplines informs this environmental turn. Environmental historians increasingly address topics related to warfare and military affairs.[8] Likewise, work in geography,[9] political science,[10] and environmental studies,[11] examine the reciprocal relationship of environmental destruction and violence of different forms. International humanitarian law developed the concept of ecocide − deliberate destruction of ecosystems − as an adjuvant to genocide.[12] Consideration of the environment opens up new theoretical and empirical horizons for genocide studies to examine the links between environmental degradation and loss of human life. One example is when belligerents spoil agricultural lands to induce famine.[13] Overall, an environmentally-informed view of

genocide, as Dwyer and Cole argue, must contemplate violent processes that unfold over longer durations and which involve non-human ecological features as influences and constraints.[14]

The connection between mass violence and environmental change is especially stark in modern counterinsurgency campaigns. Wars in which states fight against irregular partisans are especially prone to escalate to genocide and mass violence.[15] Combat typically centres in spaces where rebels can find shelter and avoid detection, such as woods, wetlands, mountains, and other rugged peripheries.[16] Geographical isolation contributes to the fractal nature of counterinsurgent wars. Armies, rebels, and various local militias with more parochial agendas create shifting constellations of alliance and antagonism.[17] Gerlach uses the term extremely violent societies to characterize how violence proliferates and expands, often trapping civilians between these disparate armed factions. In such contexts, ecocide can serve tactical and strategic ends, including denying food and eradicating obstructive natural features where enemies find succor.[18]

Counterinsurgency often repurposes techniques originating in the more pacific repertoires of socio-economic developmental. Indeed, so-called population-centric counterinsurgency approaches seek to win "hearts and minds" by offering civilians access to social welfare and development in return for compliance.[19] But development planning itself has a propensity to undermine traditional patterns of human ecology. Land enclosures, cultivation of cash crops, elimination of transhumance, and the removal of people from isolated hinterlands are all common developmental repertoires. Rivers are especially common objects of engineering and manipulation.[20] Managing rivers promises a means to rationalize agricultural production, improve commercial transport, and generate electrical power. Capital-intensive megaprojects like dams have enormous ecological ramifications.[21] High modernist ideologies and confidence in the potential for scientific management of society through technology can lead to societal disasters, as James C. Scott argues.[22]

The overlap of ecology-altering development policies and security imperatives in counterinsurgency campaign amplifies these radical tendencies.[23] Modernization and rationalization justify and animate states' attempts to transform landscapes to suite their security needs, often by expelling populations from their home.[24] The practices that conjoin ecocide and genocide are not only responses to combat imperatives. They are also enactments of deeper imaginations for societal and ecological perfection. In Iraq, this article shows, the entanglement of military necessity and development planning had catastrophic results.

The Making of a Militarized Landscape in Iraq, 1911–68

Any account of irrigation in Mesopotamia is inevitably a history of the projection of power.[25] The Ottomans began applying scientific methods to the Tigris-Euphrates river system in the nineteenth century. Upgrading hydrological infrastructure was tied to socio-economic reform, particularly converting tribal commons into private property and promoting settled agriculture. The British regarded hydrology as a catalyst to socio-economic progress in Iraq. New hydrological infrastructure in southern Iraq reclaimed land, allowed more intensive production, and facilitated commercial transport.[26] Landed elites captured the benefits of many of these reforms by accumulating previously common lands under private ownership.[27]

Kurdistan stood apart from the rest of Iraq. Kurds inhabited northern Iraq, specifically in the former Ottoman governorate of Mosul. With the partition of the Ottoman empire, Kurds found themselves living as compact minorities in Turkey, Syria, Iraq, and Iran. Kurdish leaders in northern Iraq launched an armed rebellion to block the annexation of the Mosul governorate in the 1920s. Even after annexation proceeded, Kurdish leaders demanded cultural rights and political autonomy from the Arab government in Baghdad. Kurdistan was also different ecologically. The upland region was the only portion of Iraq with enough rainfall for dry-framing. Agricultural production in Kurdistan, then, differed from that seen in the alluvial areas of southern Iraq. In other ways, though, Kurdistan was integral to Iraq. Iraq's sovereign integrity depended on retaining Kurdistan, making separatist demands anathema. Moreover, Iraq's environmental sustainability depended on the supply of water upstream from Kurdistan. Roughly half the volume of the Tigris arrives as precipitation in Iraqi Kurdistan. The remainder flows from Turkey and Iran through Iraq Kurdistan. Kurdistan was also Iraq's breadbasket, providing the majority of the country's grains and fruit through the mid-twentieth century.[28]

Across Iraq, hydrological management was intimately connected to political order. Recalcitrant tribes destroyed weirs and sluices or illegally sequestered water.[29] The British responded with aerial bombardment and by denying access to irrigation.[30] Control of the water had strategic ramifications beyond internal stability. The US military attaché in Baghdad in 1945 predicted that Iraq would be vulnerable should Syria and Iran build upstream dams. Moreover, Iraq's own dams would become targets of aerial attacks: "destruction of irrigation installations by hostile forces would greatly add to the difficulties of forces defending Iraq, and it would seem probable that as new projects are completed the country will become increasingly vulnerable to destructive air attacks."[31]

The superpower competition of the Cold War bestowed hydraulic infrastructure with even greater significance. Dams were showcases of ideological and technical supremacy for both the United States and the Soviet Union.[32] In the mid-1950s, the Iraqi government began to invest growing oil revenues into social welfare. Dams and hydrological remediation were a high priority. Although much of the effort centred on the mid-Euphrates region, there was also new interest in damming the Tigris, including new dams in Kurdistan at Dukan and Derbendikhan and further downstream at Hemrin and Diyala (see Figure 1).

Figure 1. Major Dams in Northern Iraq in the 1980s. [33]

The momentum for land reform and concomitant hydraulic control intensified with the military coup of 1958 and establishing of the Republic of Iraq. Successive Republican regimes believed that by asserting control over water distribution, they could circumvent obstructive old social classes that had hampered Iraq's agricultural production. Government technician would allocate land, water, and capital scientifically, replacing absentee landlords and local foremen who held the peasantry in debt peonage. In 1969 a new ministry of irrigation coordinated dam-building with officials overseeing agriculture.[34] The Tigris dams dramatically changed the natural landscape of the north. New roads and bypasses were cut into the mountains ahead of the construction process. Electrical transmission wires winnowed from the dams, feeding the burgeoning oil city of Kirkuk and the provincial capital of Sulaymaniyah. The Derbendikhan Dam, constructed between 1956 and 1961, stood 128 meters high and 445 meters wide. Its reservoir lake held nearly seven billion cubic meters of water and covered some 270 square kilometers, roughly the area of Queens, New York. The Dukan Dam, constructed between 1954 and 1959, was 116 meters high and 360 meters wide. Its reservoir held three billion cubic meters of water and covered 113 square kilometers, roughly the area of the Bronx. Although far smaller than Egypt's Lake Nasser at the Aswan Dam, these new formations inundated dozens of villages. They forced people to resettle and to abandon farming and pastoralism.

The issue of land reform increased the tensions between Kurdish nationalist and the central government. Abd al-Karim Qasim, leader of the 1958 coup, struggled to hold together an alliance with the Iraqi Communist Party and Kurdish nationalists like Mullah Mustafa Barzani. Barzani was a tribal grandee from the Bahidan region and the head of the Kurdistan Democratic Party (KDP). Barzani distrusted Qasim and the Communists. Yet some KDP cadres sympathized with leftist critiques of tribalism and favoured land reform measures.[35] Barzani and the Kurdish tribal elite had a lot to lose from Qasim's policies. Barzani maintained an active negotiation with Qasim over the issue of Kurdish autonomy. Still, by 1961, Barzani was supporting the tribal insurgency in the north and appealing to the US, Britain, Iran, and Israel for assistance in countering Qasim. Qasim responded by recruiting auxiliary troops from the amongst Barzani's foes and leaning more heavily on the Communists.[36]

The dams became focal points of violence as the insurgency in Kurdistan accelerated. In September 1961 fighting intensified around Derbendikhan. The Iraqi air force strafed villages with bombs and rockets. The infantry, guided by local Communists cadres, moved into to liquidate "reactionary" tribal chieftains aligned with Barzani and the KDP.[37] The fighting

disrupted the final phases of construction at the Derbendikhan dam. American engineering firms working on the project corresponded with the State Department about the political instability surrounding them. They fed intelligence to American embassy staff in Baghdad who could seldom travel to the conflict-affected north. Eventually the Iraqi army cleared out of the insurgents and construction resumed.[38]

Barzani definitively broke with Qasim in 1962. Barzani reached out to Qasim's rivals, including the Arab Ba'th ("Renaissance") Socialist Party, an Arab nationalist party, for support. In February 1963 the Ba'th and a faction of Sunni Arab army officers stormed the presidential palace and killed Qasim. Arab nationalist militias murdered hundreds of Communist sympathizers. Washington seized the chance to pull Iraq away from Moscow's orbit, quickly granting the new regime recognition and aid.[39] In November 1963 another second coup installed a pan-Arab, pro-Nasser faction to power and routed the Ba'th.

The new regime seemed initially open to Kurdish autonomy, but negotiations were halting. The dangers to the northern dams continued. British officials worried that Kurdish insurgents would target the dams, especially as the military tide turned against the KDP. Through the summer of 1963 British officials consulted with the American and British constructing engineers to gauge the dams' susceptibility to attack. Disabling the Dukan dam, they anticipated, might "paralyze oil and industrial activity" in Kirkuk.[40] The Derbendikhan dam, too, could be

> breached with small explosive charges … We believe that the Kurds who have worked on both these sites in skilled jobs are well aware of the sabotage potentialities at Dukan and Derbendikan. The Iraqis [too] seem to be equally aware of the danger.[41]

Kurdish guerrillas, the British believed, knew of "the sabotage possibilities at Dukan." The KDP refrained from attacking because they "do not wish to cause serious damage to the IPC [Iraqi Petroleum Company] for fear of alienating the West."[42] The Kurds hoped that their forbearance would earn them foreign support. But the US and other countries were already pulling away from their Kurdish proxy as a reliably anti-Communist regime was in place in Baghdad. Although autonomy negotiations continued, the government moved with a combination of brute force and divide-and-rule, recruiting tribes from amongst Barzani's traditional rivals into pro-government militias. These forces officially dubbed National Defense Battalions (*qiyadat difa' al-wataniyya*, NDB) and labelled knights (*forsan*) in Arabic. In Kurdistan, though, they were more commonly known by the bucolic diminutive "donkey foal" (*jahsh*). The government accelerated efforts to change the demographic balance in sensitive areas and encouraged Arabs to move to Kirkuk while simultaneously restricting growth on Kurdish neighbours.[43] These efforts also deeply affected rural zone. The Iraqi warplanes bombed villages with napalm. British diplomats heard persistent rumours of chemical munitions as well. Fighting continued through 1965 in the upland areas of Penjwin, north of the Derbendikhan Lake, and Qara Dagh, the mountains west of the Dukan lake.[44] Taking a rare trip to the restricted areas of Sulaymaniyah province in May 1964, a British diplomat related how "virtually all villages within half a mile or so of any main road are burnt out shells … . However, the army does not seem to have operated further than this distance from the roads and the remaining village are intact … " The government managed to eliminate resistance in the population centres only to drive opposition into mountain terrains that were harder to patrol. The NDB guarded the Dukan and Derbendikhan dams.[45] These dams had become essential to sustaining political order in the north.

Hydro-Power and Modernization under the Ba'th, 1968–79

The 1968 Ba'th coup reopened the door to the KDP's efforts to gain autonomy. Barzani and the KDP negotiated with the newly-installed President Ahmed Hassan al-Bakr, and his chief deputy, Saddam Hussein. In March 1970 the government broached an expansive programme to recognize Kurds as a national community and adopt Kurdish as an official language.[46] Again, however, tensions between the KDP and the government simmered and negotiations over details and implementation dragged on. By 1972 government media was accusing Barzani and the KDP of treason, intimidating fellow Kurds, and of sabotaging electrical grids, bridges, and dams.[47]

In early 1974 the Ba'th unilaterally formed an autonomous region, comprised of the northern provinces of Dohuk, Erbil, and Sulaymaniyah. Kurdish would be an official language and there would be some measure of self-rule. Still, the plan offered no guarantees and could be revoked at any time. It excluded territories which the Kurds claimed as part of their homeland, such as Kirkuk, the Nineveh Plains, and the Diyala river basin.

The KDP rejected the Ba'th's plan and intensified its military maneuvers. Iran provided artillery and aerial support from across the border. The US and Israel provided armaments and training. Guerrillas moved down from the highlands to capture towns and cities. Barzani believed that the KDP could win a war of attrition and undermine Iraq's will to fight. The US, Iran, and Israel had different objectives, however. Iran, in particular, wanted to wear down Iraqi forces but did not want

to inspire Kurdish insurgents on its own side of border. Iranian and Iraqi diplomats negotiated secretly in Algiers. On 6 March 1975, Iraq conceded its territorial claim to the Shatt al-Arab in return for Iran's pledge to cease support for the Kurds.

The insurgency collapsed and KDP fractured. Jalal Talabani, a stalwart of the KDP leftwing, quit the KDP to establish the Patriotic Union of Kurdistan (PUK). Barzani went into exile and died four years later. His brother, Idris, and son, Masoud, took over the rump KDP leadership.[48]

The breakdown of the insurgency opened up the landscape of northern Iraq to new types of government penetration. The government accelerated its Arabisation campaign in Kirkuk, razing with Kurdish neighbourhoods and villages. Arabic-speakers were recruited from central and southern Iraq to serve in the industrial workforce.[49] Again, the campaign reached far into rural areas. As early as December 1975 a Dutch humanitarian delegation visiting Kurdistan described how the Iraqi government had forcibly depopulated some fifty villages. This included areas in the Diyala river basin south of Derbendikhan and along the Iran border, which had deliberately left out of the autonomous area. Kurdish villages in the districts of Jalawa, Khanaqin, Quraitu, and Mandali were targeted for destruction, to be "'refilled' by Arab farmers for military/strategic reasons." Within the autonomous zones, residents of Simle near Dohuk, Zakho near the Turkish border, and Halabja and Penjwin near the Iranian border, were "transported to newly built 'housing communities' or model villages." These villages, the observer related, where situated near the main roads and thus were accessible for both welfare services and military surveillance. Analysts likened these housing complexes to strategic villages used by the "US and Portuguese forced settlement policies in Vietnam and Mozambique respectively."[50]

These were the first steps in a larger process of transforming Kurdistan's human ecology. In 1970, just two years into its rule, the Ba'th put forward new land reform directives. Peasants were required to join Ba'th-affiliated cooperative societies to get access to new lands. The cooperatives would supply agricultural services, capital materials, and serve as wholesale purchasers. Local cooperative branches incorporated 160 farmers drawn from five to twelve villages. The cooperatives were are also integrated into the Ba'th-dominated Iraqi Farmers Federation. The government's implementation of land reforms was inconsistent and even lackadaisical in much of Iraq, hampered by maladministration, corruption, and societal resistance. With the Kurdish insurgency shattered, the Ba'th applied land reform with special alacrity in the north. Law No. 117 of 1975 specifically targeted the erstwhile autonomous region plus neighbouring Nineveh and Kirkuk provinces for more intensive remediation. The objective was to break the remaining power of the Kurdish tribal leaders.[51]

The government linked positive inducement with punitive measures. There were amnesties for Kurdish fighters and attempts to prop-up a politically-reliable Kurdish home rule apparatus. Touring the north in September 1976, Saddam Hussein stated that Iraq's "revolutionary process of construction" might necessitate the relocation of some citizens in order to facilitate the provision of jobs. All Iraqis were experiencing some hardship due to "redeployment," not just Kurds.[52] Saddam Hussein also appeared in Iraqi media wearing traditional Kurdish dress and trying to speak a few words in Kurdish. There were new announced investments in Kurdish language school and instruction.[53] Government housing complexes (known in Arabic as *mujama'*– "congregations") purported to offer Kurds a better, more modern life. Ghareeb, whose account of the period is generally sympathetic to the government, relates how expenditures helped Kurdish agriculture and industry and expanded access to education and healthcare. The towns themselves represented a significant expenditure. Some 30,000 families had been relocated to an estimate 31,878 newly built houses, mostly in Sulaymaniyah province, where the irrigational infrastructure was most intensive. The construction of these new towns alone cost the government over 89.5 million dinars. In addition, each family received 500 dinars for start-up moneys and compensation for the value of lost orchards and farms.[54]

Such claims to improving conditions in Iraqi Kurdistan must be taken with a grain of salt, though. A British diplomat touring rural northern Iraq in 1976 noted how "everything was very peaceful but the military was very much in evidence with many of the hilltop posts still manned." There were new industries. New infrastructure made it easier to access rural space. "The road between Sulaymaniyah and Derbendikhan, which was in a shocking state last year, has been realigned and resurfaced." A Kurdish hitchhiker related that

> harvest had been good and standard of living had gone up since the end of the troubles 18 months ago. He spoke approvingly of the new villages: the houses would have electricity, but not as yet running water, and were much better than the accommodation in the existing villages.[55]

Most importantly, the new towns allowed people to stay close to their original farmlands.[56]

Expansion of hydrology remained a key government priority. Even as the insurgency flared through the mid-1970s, Iraq hired Soviet engineers to refurbish the Dukan dam, improving its hydroelectric output to 400 megawatts, much of which was

directed to the Kirkuk oil industry.[57] In March 1978, on the fourth anniversary of the autonomy plan's announcement, government media touted the expansion of education, land redistribution, drainage, and irrigation in Kurdistan.[58]

Leszek Dziegel, a Polish ethnographer who spent several years in northern Iraq in the late 1970s, provides important insights about how these changes affected human ecology. Even in rain-fed Kurdistan, he noted, irrigation was of critical. "The Kurdish farmer would like to irrigate as much land as he possibly could, but he is hampered by government's restrictions of water use, by labor shortages, and lack of suitable tools and financial resources to purchase the pumps."[59] Kurdish farmers relied on mechanical irrigation – and by extension, on the government – for their livelihood.

The Ba'th government was deeply committed to capital-intensive modes of economic development in Iraq.[60] New irrigation infrastructures undergirded the construction of new towns. The Shemamok irrigation zone included the lowland areas between Erbil and the Greater Zab and extended north to the Dukan Dam. The Zakho irrigation zone was in the foothills near the Tigris. The Sarisian Irrigation project extended from the northeast bank of the Dukan reservoir and included the villages of Bardashan, Bemusha, Bengart, Tanja, Allu Mulla Dawud, and Awena. Many residents had already relocated to make room for the Dukan Lake in the late 1950s, but remained close by. After 1975 the government moved these people farther away and into entirely new towns. The Balanda Irrigation project on the left bank of the Greater Zab included Amadia and Chalki. The "most radical" resettlement, according to Dziegel, was in the Penjwin area in the high mountains near the Iranian border upstream from the Derbendikhan dam. In 1978 it comprised fifty-one villagers and 18,000 residents. Most of these villagers were forced into government-built towns. The relocation had permanently depopulated the remaining highland hamlets.[61] The combat inflicted permanent ecological harm. The British ambassador related how

> trees and vegetation are burned off, the latter being especially serious in mountains where erosion was already a problem…. Reconstruct was pushed ahead and new projects begun; mostly in agriculture, but also in light industry, particularly near the provincial capitals of Sulaymaniyah and Dohuk.[62]

Yet there was no apparent improvement in Iraq's economic productivity. From the mid-1970s to mid-1980s Iraq's agricultural yield per hectare and total tonnage produced fell by a third, even as the cultivated area remained largely unchanged.[63]

In Kurdistan, especially, modernization served strategic and military ends. The roads and housing complexes which facilitated service delivery also enabled the beginning of a cordon sanitaire along the Iranian and Turkish border, Ghareeb conceded.[64] Dziegel describes resettlement as fundamentally a response to "the unstable situation in the border zone."[65] The relocation hit Kurdistan's pastoralists especially hard. No previous Iraqi government could stop herders trespassing on property. Now "the whole country is under intense scrutiny by policy and military force … any contraventions of the law could hardly pass with impunity."[66] Transhumance was effectively enclosed. The government regarded the cost of transplanting communities and providing the amenities like irrigation as necessary to avoid "new outbursts of Kurdish discontent."[67]

Water Control in an Extremely Violent Society, 1980–88

The outbreak of the Iran-Iraq war (1980–88) removed the pacific façade from Iraqi Kurdistan. The war began on 22 September 1980, when Iraqi forces launched a surprise attack across the Shatt al-Arab into the southern Iranian province of Khuzestan. Iraq demanded the abrogation of the Algiers Accord and reassertion of Iraqi navigation rights on the waterway. Saddam Hussein's thinking in launching the war combined defensive and offensive motivations. He feared that Ayatollah Khomeini would export his revolutionary idea to Iraq, but he also believed that Iran itself was weakened by internal divisions and the loss of American support. Indeed, as the US and Western no longer supplied Iran, the geopolitical balance tilted in Iraq's favour.[68] Western powers sold Baghdad advanced weaponry (including chemical and nuclear weapons components).

Iran made repeated incursions into Iraqi Kurdistan, hoping to establish a secondary front in the north that would compel Iraq to divert forces from the main southern axis. Tehran reestablished ties to the Kurdish nationalists. Saddam Hussein tried to play the Kurdish factions off of each other, initially by striking a deal with the PUK while attacking the KDP. The government also recruited second order minorities (e.g. Turkomen, Yezidis, Arabs, and Christians) to counter the Kurdish insurgents.[69] Saddam Hussein tried to reinvigorate the dormant Kurdistan regional assembly. He attended the body's opening session.[70] The government declared rural areas in the north prohibited zones and bombed the villages there. Teachers and other government personnel where withdrawn and an economic blockade was imposed. The government

tried to intimidate or entice villages to relocate to the government's residential complexes, where they could receive food rations, jobs, and even join the NDB paramilitaries. Still, the insurgency gained strength. By the middle of the decade, Baghdad's divide-and-rule tactics toward the Kurds had failed. Both the KDP and PUK were in open alliance with Tehran. The government's writ extended barely past the main northern cities. Kurdish guerrillas and Iraqi Communist cadres fought side by side with Iranian troops. Insurgents lived in hideouts and tunnels in the mountains. Villagers lived in caves by day and tended their animals and crops by night.[71]

Both Iraq and Iran regarded water itself as a military asset. In the south, Iranian and Iraqi forces improvised sluices, dams, and bridges to traverse the marshes or augment defensive water obstacles. In the north, the dams themselves remained targets. In the first month of the war Saddam Hussein contemplated attacking Iranian dams in order to damage Iran's hydroelectric production and possibly induce debilitating flooding.[72] In 1986 Iraqi aircraft did strike Iranian dams on the Dez and Karun rivers as part of a wider aerial offensive.[73]

At the same time, Iraq feared attacks on its own hydrological infrastructure. After the initial assault stalled, Iraq had to divert forces to defend at Halabja and Mawat, the key approaches to Derbendikhan and Dukan, respectively. The threat of Iranian-Kurdish attacks on the northern dams forced Iraq to commit forces to defend the north.[74] In 1983 Iranian forces working in conjunction with the KDP guerrillas launched their first major incursions into Kurdistan. Operation Dawn II in July targeted Hajj Omran and Rawanduz in the Erbil province. Operation Dawn IV in October and November targeted Penjwin in Sulaymaniyah. Saddam Hussein and the Iraqi general staff worried both about guerrilla sabotage and Iranian ballistic missile attacks on the dams.[75] Ra'ad Hamdani, then an Iraqi army staff officer later a Republic Guard general, told American interviewers that Iraqi leaders knew that

> if Iranian forces made it to the dams of the rivers in the north, they would gain a major advantage. Those dams were critical, because if the Iranians were to destroy them, the central and southern areas [of Iraq] would be flooded. From the Iranian perspective, this would represent a great achievement.[76]

The Iranian assaults in 1983 occasioned Iraq's first use of poison gas, attacking Iranian and Kurdish forces.[77]

Iran again targeted Derbendikhan through Halabja in July 1985, this time with support from the PUK in Operation Jerusalem III. Iraqi forces again repulsed the attack. In September 1986 Iran attacked the Dukan dam, cutting off electricity to Kirkuk for several days. The KDP launched a concurrent and coordinated attack near Zakho. Iraq again had to redeploy troops to address the danger in the north. Even as the southern front ground to a stalemate, Iranian continued incursions on Dukan through 1987.[78]

Iraq's need to maintain irrigation infrastructure converged with efforts to counter the Iranian-Kurdish threat. Iraq's own counterinsurgent warfare manual stressed the organic connection between guerrillas and the natural environment. Glossing Mao's famous dictum, it recommended "getting the little fish out of the water" by isolating the insurgents from the population. If guerrillas could not rely on the population then they would

> have to withdraw to the forests and marshes … Combat with insurgents is confined to rugged and difficult areas. Mountains, forests, and marshes are suited to their operation because they greatly restrict the movement and use of armor … They favor the insurgents' foot mobility as long as the tanks are restricted to roads, trails, and the small expanses of ground that may exist in the area.[79]

In March 1987 Ali Hassan al-Majid, a senior Ba'th official and cousin to Saddam Hussein, was named commander of Iraqi forces in the north. Majid began preparation for more aggressive village clearances, forced relocations, and mass killing. This became known as the Anfal operation. The campaign aimed not just to remove Kurdish population but to sever bonds between Kurdish society and rural ecology, as Khoury puts it, to "destroy the territory's ability to sustain all forms of life."[80] In one of the first documents authorizing mass violence from 5 June 1987, Majid instructed the army and secret police to evacuate Kurdish villages from areas along the Iranian border. The memo specifically ordered soldiers to "kill any human being or animal present within these areas. They are totally prohibited."[81] A follow up memo from 22 June specified that

> the presence of human beings and animals is completely prohibited in these areas and shall be regarded as operational zones in which [the troops] can open fire at will, without restrictions, unless otherwise instructed by our headquarters. Travel to and from these zones, as well as all agricultural, animal husbandry, and industrial activities shall be prohibited and carefully monitored.[82]

Aerial surveillance detected illegal agricultural production in the mountains. A 1988 memo specifically prescribed seizing

"vehicles, tractors, and cars" in prohibited areas. "There should be no life in restricted areas from now on."[83] Troops used military trucks and bulldozers to destroy "mud villages" and dynamite cement structures. Aquifers and wells were filled and electrical transmission lines torn down.[84] These orders explicitly linked targeting ecological features with targeting people.

At the same time that the government destroyed rural villages, it invited Kurds to "return to the national ranks" by moving into the government-build collective towns. Returnees could be inducted into the NDB and granted new parcels of land.[85] NDB forces and regular troops involved in the forced evacuation of villages were incentivized to seize animals, crops, tractors, water pumps, and other agricultural equipment as booty. In some case land itself was expropriated.[86] Still, Majid warned loyalists tribes that he would hit their villages with chemical weapons, too, if they refused to relocate.

The government-built towns became, in effect, internment camps. The government registered and screened arriving Kurds, comparing their names against a recent census roster. Interrogation, torture, and summary executions were common. The camps offered minimal food, water, and shelter.[87] The newly-built housing complexes were squalid compared to those of the 1970s. Instead of the mudbrick or timber typical of rural Kurdish housing, the new housing used uninsulated cement blocks. The complexes mixed peoples from numerous villages and tribes. They were situated farther from fields, springs, and pastures. Animal husbandry was discouraged. The displaced had no choice but to seek livelihood as urban labourers.[88] By the government's own tallies, between April and July 1987 (i.e. before the acceleration of violence in 1988) some 1,444 villages were destroyed and 26,399 families resettled. The human and natural terrain that helped hide anti-government activities dissipated. Some 663 insurgents surrendered and 22,000 military deserters were captured in this same time period.[89]

The geography of the Anfal campaigns overlay the areas where hydrological remediation had been most intensive in the prior decades. The first phase of February and March 1988 targeted the Jafati Valley and Gojar Mountains, an upland zone immediately east of Dukan and southeast of the reservoir. This area had been excluded from the 1974 autonomous region despite significant Kurdish populations. Concurrent with the first Anfal, Iranian and Kurdish forces launched coordinated attacks at Halabja and at Mawat aiming to seize the Derbendikhan dams.[90]

As the wars' end appeared imminent, Iraqi leaders (as well US intelligence agencies) anticipated that Iran would try to use control of the upstream dams to blackmail Iraq into concessions. Iraqi forces proactively drained the reservoir at Derbendikhan to prevent Iran from releasing the waters. Iraq increasingly targeted Kurdish civilians, whom the government blamed for harbouring the insurgents and Iranian agents. In mid-May there were reports of PUK and Iranian forces infiltrating Halabja again. Iraqi warplanes struck the town with chemical weapons on 16 March, killing at least 3,200 Kurds, mostly civilians.[91] Forensic reports found that the chemical agent was likely sarin, a neurotoxin originally invented as an agricultural insecticide. A Human Rights Watch report derived from eye-witness accounts specifically notes how "dead bodies–human and animal–littered the streets, huddled in doorways, slumped over the steering wheels of their cars."[92] The destruction of Halabja, although technically a separate military operation from the Anfal campaign, became a synecdoche of the entire Kurdish genocide.

The second Anfal, in late March, targeted the Qara Dagh mountains to the west of the Derbendikhan lake. The Iraqi army again used conventional and chemical weapons to drive population out of targeted areas. Residents fled to Sulaymaniyya or the resettlement complexes closer to the dam at Zarayen and Naser. The third Anfal in April 1988 attacked villages furtherer south of Derbendikhan along the Diyala River and east of Sulaymaniyya in the Germian plain. In isolated villages like Warani, in the southwest of the Germian plain, troops burned houses and killed animals. Villagers tried to take to the mountains, but could only hold out a few days. Most victims of the Third Anfal fled for hastily constructed camps like in Leilan, southeast of Kirkuk.[93] According to government reports, PUK forces set up checkpoints to try to stop people from fleeing, underscoring how civilians could be caught between guerrillas and government forces.[94]

The fourth Anfal, in early May, returned to the valley of the Lesser Zab downstream from Dukan. In mid-May Iranian and Kurdish forces again tried to attack the Dukan dam, capturing highlands from which they could shell the facility.[95] The fifth, sixth, and seventh Anfal assaults, from May to August, targeted the valleys of Shaqlawa and Rawanduz north of the Dukan lake, driving rural population to towns along the lake, like Hajiawah, Ranya, and Chwaqurna, or westwards to Erbil.[96] Only in the final phase of Anfal in late August and September 1988, after the war with Iran had ended, did operations shift to the traditional Barzani stronghold of Bahidan in the far north. The irrigation renaissance of prior decades mostly bypassed this area. Witnesses reported that the devastation of the rural areas had a counterintuitive benefit to the victims. Refugees fleeing to Turkey could forage and eat abandoned farm animals.[97]

A brutal logic connected societal transformation, agricultural development, and the destruction of the Kurds. In a taped meeting from 15 April 1988, Majid boasted that

> by next summer there will be no more villages remaining that are spread out here and there throughout the region, but only camps. It'll be just like the hen when she puts the chicks under her wing. We'll put the people in the camps and keep an eye on them. We'll no longer let them live in the villages, where saboteurs can go and visit them. Emigration from the villages to the city is necessary in the north of Iraq. From now on I won't give the villagers flour, sugar, kerosene, water, or electricity as long as they continue living here. Let them come closer to hear me, so that I can tell them the things I believe and want in ideology, education, and common sense. Why should I let them live there like donkeys who don't know anything? For the wheat? I don't want their wheat. We've been importing wheat for the past twenty years. Let's increase it to another five years. I will prohibit large areas; I will prohibit presence in them. What if we prohibit the whole basin from Qara Dagh to Kifri to Diyala to Derbendikhan to Sulaymaniyah? What good is this basin? What did we ever get from them? Imagine how much we paid out and lost on those areas. How many good citizens are there among those people and who many bad ones?[98]

The Iraqi army operations of the 1960s and 1970s had been limited to the main roads and larger population centres, leaving remote villages unscathed. Majid expressly wanted to penetrate deeper into the rural areas which served as insurgent redoubts.

> No human beings except on the main roads. For five years I won't allow any human existence there [i.e. in the remote villages]. I don't want their agriculture. I don't want tomatoes; I don't want okra or cucumbers. If we don't act in this way the saboteurs' activities will never end, not for a million years.[99]

The disregard for Kurdistan's agriculture was not rhetorical; it illustrated the governments' choice to ignore ecological and economic costs. Iraq endured severe inflation through the war. The price of basic foodstuffs like cucumbers increased six-fold.[100] The ecological devastation did economic harm but was worth the security gains.

Still, the Ba'th's commitment to developmentalism did not flag in the face of wartime economic pressures. Iraq borrowed billions to maintain both guns and butter for its people and continued to investment in large infrastructure projects. Construction finally began on the Bekhme Dam on the Greater Zab (the project was later abandoned due to lack of funds). New dams on the Tigris north of Mosul and the Euphrates at Fallujah and Haditha were completed. Iraq solicited bids from German, Japanese, and Brazilian firms to refurbish the Derbendikhan dam, even as fighting raged around it.[101] Construction of twenty-two new collective towns, each with the capacity to absorb 10,000 to 15,000 each, preceded apace.[102] Village destruction, ecological alteration and collectivization were operationally conjoined.[103]

The Anfal campaign was by far the most violent phase in the decades-long counterinsurgency campaign in northern Iraq. Conservative estimates hold that at least 50,000 people died due to military operations and the impact of exposure, malnutrition, and diseases associated with population displacement during the late 1980s. Some estimate the number as high as 100,000. One and a half million Kurds left their homes and tens (and possibly hundreds) of thousands sought refuge abroad.[104] The Anfal broke the Kurdish insurgency. It allowed the Iraqi government to block Iranian advances, eliminate Kurdish presence outside designated autonomous zone, and hasten the Arabisation of Kirkuk.[105] The Anfal also continued the ecology-modifying development schema that had been deployed in Kurdistan since the 1950s. Retrospective studies using satellite imaging show how orchards, farmlands, and pasturages were left fallow after the genocide.[106] Rural depopulation, especially the loss of working-age men, depleted the pool of agricultural labour.[107] Contamination of soil and water from chemical weapons likely stunted harvests and tainted produce.

Still, the Ba'th's forced draft modernization of Kurdish society was grimly successful. Kurdistan had been Iraq's rural backwater in 1957. Only a quarter of inhabitants of Dohuk, Erbil, and Sulaymaniyah provinces dwelt in cities. By 1987, roughly three quarters did, the same proportion as the rest of Iraq. In such habitats, as Majid said ominously, the government could keep people firmly under its wing.

Indeed, the Ba'th regarded their campaign in Kurdistan as a blueprint for how to deal with rebels absconding in difficult terrains. Saddam Hussein commended Majid for his role in the northern campaign.[108] Majid was dispatched to deal with the insurgency emanating from the southern marshes in 1991. Kurdistan became the tactical model for the conduct of counterinsurgency, combining techniques of environmental obliteration and forced population transfers.[109] Iraq's Speaker of Parliament unapologetically likened the fate of marsh-dwelling Shi'i Arab communities to that the Kurds. Forcible resettlement and removal from primitive conditions was for their own betterment.[110] The Ba'th government integrated ecological manipulation as a tool of repression, with catastrophic results.

Conclusion

Conclusion

This article expands our understanding about the causes and consequences of the Iraqi Kurdish genocide and reflects broadly about how attention to the natural landscape can inform genocide studies. Firstly, examining environmental elements in the Kurdish genocide broadens understanding of the motivations and forms for violence. The Anfal has become a major element in nationalist historiography emphasizing Kurdish victimhood.[111] Such framing accords with broader discourse about the Ba'th's ethnosectarian oppression. Coding violence as identity-based, though, overlooks the complexity of extremely violent societies and the multiple vectors, motivations, and forms of destruction.

An ecocritical view widens the temporal and analytical aperture for understanding mass violence. While violence peaked during the Anfal of the late 1980s, genocidal processes began in northern Iraq even as early as the 1960s and 1970s. The violence did not always follow a consistent calculus for ethnic extermination. The government mostly targeted Kurdish populations living in obstreperous upland and rural areas while sparing larger cities. In so far as urbanization was a proxy for class in Kurdish society, the violence combined elements of ethnocide and the extermination of rural and tribal classes.

Importantly, though, this study shows how these same rural areas were also the objects of ecology-altering development policies. Dam-building was part of a global circuitry of Cold War development initiatives. But frustration over lagging development contributed to the Ba'th regime's sense of vulnerability. The alliance between Kurdish insurgents and Iran and the military risk to the dams added further pressure on the Iraqi government. Still, even amidst escalating physical and environmental destruction, the government kept open options for amnesty. Returning to the national ranks required both political and ecological submission. Kurds had to renounce their nationalist claims. They also had to assume an urban lifestyle, to become dependent on the government for electricity and irrigation and more open to state surveillance. The Anfal rendered this a false choice, however. The damage inflicted on the natural landscape made return to rural life impossible. The ecological and social alterations became irreversible. In this regard, the violence of Kurdistan fits a pattern seen elsewhere in Iraq where ethnosectarian and environmental violence become mutually reinforcing.[112]

Secondly, these conclusions inform general theories connecting ecological devastation and genocide. Studies of civil wars and mass violence often rely on data that originates in cities or are otherwise derived from urban-based sources. City-dwellers are typically the primary focus.[113] A new vocabulary denotes deliberate attacks on the urban built environments.[114] But mass killing during counterinsurgency typically occurs in rural peripheries. Here natural features – soil, water, plants, and animal – are most elemental to human survival. Understanding the ecological underpinnings and ramifications of genocides draws inquiry back to these outskirts.

Thirdly, thinking about the ecocide-genocide nexus highlights how ideas of social and ecological engineering simultaneously inform developmental planning and motivate mass murder. Ecological destruction does not just serve immediate military ends. It also comports with development models promising positive social change. These benign agendas, though, can become imbricated with more coercive campaigns that aim to undercut societies' ecological roots. Dams and other large engines of ecological alteration are simultaneously weapons and targets. Displacement by development and wartime forced relocation are twinned, removed only by degrees. There have been other cases where development planning, ecological alteration, and counterinsurgency merged. This includes Kurds in southern Anatolia, where Turkey's campaign of anti-guerrilla warfare and rural depopulation overlapped with the construction of dozens of dams on the Tigris and Euphrates.[115] Similar processes unfolded in the Kazakh genocide of the 1930s[116] and the assault on indigenous populations in the Americas,[117] among other cases. Civilizing requires not just changing people, but altering their fundamental relationship with the nature. Abandoned to landscapes of ashes and mud, many people don't survive to enjoy such dubious remediation.

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