

Securitizing the Climate Crisis: Racial Geographies of Empire and the Agri-Fintech Frontier

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I was at the 2014 World Food Prize Conference when I first heard about a novel insurance technology designed to cover millions of farmers on the frontlines of the climate crisis. I had gone to the conference—the annual gathering in Des Moines, Iowa, centered upon the bestowal of the self-described “Nobel Prize in food and agriculture”—to learn how, backed by the U.S. government and the Bill and Melinda Gates Foundation, the world’s largest agricultural biotechnology/seed companies were working to cultivate a “Green Revolution in Africa.” They were targeting the continent’s tens of millions of “smallholder farmers,” who farm small plots of land largely outside of commercial seed markets. The most important crop for these farmers—and the focus of the Green Revolution projects I had traveled to Des Moines to research—was maize. So I was particularly struck by the argument of a panel called “the smallholder’s lifeline,” that the key to bringing Africa’s smallholders into commercial maize markets was to “bundle” seed sales with a kind of microinsurance called *weather index insurance*. Marco Ferroni, the executive director of the Syngenta Foundation, the philanthropic branch of the third largest ag-biotech company, described how farmers in rural Kenya used their cell phones to enroll in his organization’s index insurance project. As he explained, when farmers bought a five-kg bag of maize seed from their local agro-dealer, they would now find a small card with a code that they could enter into their phone, linking their phone to a nearby weather station and activating the insurance policy. If the weather station measured less than a predetermined amount of rain during the growing season, the farmer would receive an automatic payment for the value of the seeds through Kenya’s

mobile money system, M-Pesa. The Syngenta Foundation was finding that insured farmers were much more likely to buy hybrid seeds, such as those sold by Syngenta. Ferroni explained that index insurance could also prove lucrative for multinational reinsurance companies (insurers who insure insurers), such as SwissRe and MunichRe. Most of the “risk” captured in his foundation’s project was transferred to these companies, in which it held the potential to be *securitized* as a tradeable financial instrument—pooled together with risk captured from thousands of other microinsurance policies to form an insurance-linked security. For farmers, seed companies, and insurers, index insurance promised to be a triple win.

The Syngenta Foundation’s pilot project led to two Nairobi-based for-profit companies, Agriculture and Climate Risk Enterprise (ACRE) and Pula. These agricultural financial technology (agri-fintech) companies use digital platforms such as M-Pesa to link millions of smallholder farmers to broader data and risk transfer markets. They have garnered industry awards and glowing coverage in Western media outlets, such as *The New York Times*, *The Financial Times*, and *The Economist* (Bird 2018; “In Africa, Agricultural Insurance Often Falls on Stony Ground” 2018; Mayersohn 2019). In the words of Pula’s mission statement, it aims to use “technology and parametric insurance to insure the previously unbanked, uninsured, untapped market of 1.5 billion smallholders worldwide” (Pula n.d.). This approach exemplifies the broader development paradigm of “financial inclusion” in which an increasing number of financial companies are using new digital technologies to tap into frontier markets (Gabor and Brooks 2017). Pula and ACRE’s agri-fintech expansion operates along two fronts: first, they transform large pools of previously uninsured “risk” into commodities that can be traded by reinsurance companies, and second, they harvest data from farmers’ phones, which they can sell to their “upstream” agribusiness partners. To date, both companies have partnered with some of the largest seed companies working in the region, including multinationals such as Corteva (the agricultural branch of the company resulting from the 2017 mega-merger of Dow and DuPont) and Bayer (which became the world’s largest agricultural biotechnology company when it acquired Monsanto in 2018). Both companies explicitly brand their financial services in terms of the climate crisis, marketing their insurance products as tools that can, as Pula’s website declares, “power the resilience and profitability of smallholder farmers” (Pula n.d.). From their perspective, farmers can be trained to manage ever-more-frequent weather and economic “shocks” in ways that increase their productivity and profitability. Scholars show how this “resilience” framework is “increasingly pervasive” across much of the Green Revolution in Africa (Gabor and Brooks 2017, 424). But another connection receives less attention in critical scholarship on the Green Revolution: the link between financialized approaches to managing “climate risks” and the U.S. security state’s understanding of and plans for the climate crisis.

In this article, I trace an emerging agri-fintech/U.S. security state nexus by reading narratives driving index insurance projects alongside two sets of U.S. government documents: 1) U.S. intelligence community assessments that de-

scribe climate change and food insecurity as threats to American national security interests and 2) U.S. global food security policy and strategy documents. Using the concept of racial geographies, I draw out parallels between the ways that agri-fintech projects and the U.S. security state position Africa as a space of perennial crisis. These geographical representations extend long-standing Western depictions of Africa as a singular, separate, and inferior space. They form the bases for a resilience logic that calls for outside interventions—on the part of American special forces or multinational financial corporations—in the name of securing an ever-expanding frontier of climate risk.

This intersection of finance and empire occurs as the United States and China have ramped up development and security spending across Africa during the past decade, prompting some commentators to declare a new “scramble for Africa” (Carmody 2015; “The New Scramble for Africa” 2019). Yet, although scholarship on the contemporary Green Revolution for Africa has persuasively critiqued its “philanthrocapitalist” origins, neoliberal agenda, and intersections with corporate agribusiness and global finance, more work is needed to understand how its projects intersect with the American security state (Moseley, Schnurr, and Kerr 2015; Patel 2013; Schurman 2017). I use the term “security state” not just to refer to the parts of the state most commonly associated with “national security” or “defense,” but to signal more broadly the increasing *orientation* toward security thinking that has become pervasive across state institutions (Grewal 2017). Importantly, today’s Green Revolution builds upon a legacy of Cold War-era American agricultural development efforts across the Global South, which were deeply tied to U.S. foreign policy (Cullather 2013; Perkins 1997). Although the role of the United States has certainly taken a back seat to this generation’s Green Revolution funders—most notably the Gates Foundation, which is by far the largest financial backer of the Green Revolution across Africa—it remains important to connect the Revolution to American state power. Drawing out these connections, I suggest, demands greater attention to how today’s more privatized, more financialized Green Revolution builds upon legacies of racialized finance and empire. As Raj Patel (2013) argues, the Green Revolution in Africa is “*more* biopolitical—more focused on the management of individual bodies—than the original Green Revolution” (4). Agri-fintech’s focus on linking hundreds of millions of individual farmers to international commodity and financial markets certainly demonstrates this characteristic. But how are these efforts rooted in longer bio- and geopolitical histories? How might the financial inclusion frontier extend from a history in which finance capital has long sought out “subprime” populations as sites for extractive investment (Chakravartty and Ferreira da Silva 2012)? And how does a more “resilient” American security state build upon an American empire that has relied upon racial logics to justify both its exceptional status as a global police force in the war on terror and the need to secure the livelihoods of others (De Genova 2012)?

The ongoing, compounding crises of climate change and the COVID-19 pandemic have only heightened the stakes of this conversation. As a result of the global economic recession precipitated by the pandemic, a growing num-

ber of farmers and food workers worldwide have fallen into conditions of hunger and poverty with those across sub-Saharan Africa experiencing some of the most drastic increases in food insecurity. Against this backdrop, important international policy debates continue to question what building “resilience” into the food system should look like (Canfield, Anderson, and McMichael 2021; Clapp and Moseley 2020). On the one hand, scholars and activists argue that corporate-dominated, international trade-oriented “business as usual” across global food systems is exacerbating vulnerability, especially for the world’s poorest people (Belay and Bridget 2021; Wise 2020). Yet, at the same time, key institutional actors, such as the Gates Foundation and the U.S. Agency for International Development (USAID) are doubling down on their market-driven approach to managing food insecurity, largely through continued efforts to bring smallholder, subsistence farmers into international supply chains (Clapp and Moseley 2020). Agri-fintech companies such as ACRE and Pula that already market their technology as a form of crisis relief are well positioned to expand their operations through the pandemic (Reisman 2021). Yet questions remain about what kinds of social relations will be made resilient through the agri-fintech approach to managing the climate and COVID crises. Although agri-fintech’s financial inclusion paradigm promises to help the most vulnerable farmers manage their “climate risk,” this approach might normalize exploitative financial practices that reproduce much longer colonial and racialized lines of extraction in that value (here in the form of data and insurable risk) is extracted from African fields to generate capital that circulates to and from London, Brussels, New York, and Zurich.

Methodologically, I draw upon interviews with officials working for agri-fintech and development organizations that I conducted as part of a broader research project on the politics of the Green Revolution in Africa. I complement this interview-based research with close readings of the aforementioned U.S. government publications. I begin with a brief section that shows how climate change should be thought of as a deeply racialized phenomenon. Using “resilience” as a kind of nodal concept, I then trace connections across U.S. intelligence community assessments of food security and climate change and the U.S. Global Food Security Act/Strategy. I then situate contemporary index insurance projects within broader histories of racialized financial experimentation. Finally, I connect the “resilience thinking” found across index insurance projects, U.S. food security policy, and the security state’s climate change forecasts with the expansion of U.S. military operations across Africa during the Obama and Trump administrations.

The Climate Crisis’ Racial Geographies of Privilege and Vulnerability

In drawing out connections between racialized finance and the security state in an era of climate crisis, my approach builds upon scholarship that views both the causes and consequences of climate change as racialized. As Laura Pulido (2018) has recently written, despite much popular and scholarly attention

generated by the term “Anthropocene”—the neologism that recognizes humans’ dramatic impact on the earth as a new geological epoch—there has been a dearth of attention to race and racism in mainstream conversations around climate change. Offering a much-needed corrective, Pulido insists that we recognize the role of race in the Anthropocene. “Certainly it is not solely a racial process,” Pulido writes, “but [racism] has played an important role in both producing it and in determining who lives and dies” (117). To illustrate her point, Pulido cites the inverse relationship between the countries that have contributed the most to greenhouse gas emissions and those in which people are most likely to die from the effects of climate change (the United States and Western Europe have contributed the most fuel to the climate change fire, but Americans and Europeans are the least likely to die in the flames; the opposite is true for many countries in the Global South). This racialized “differential vulnerability,” she argues, is no accident of geography. Rather, it has been shaped through deep historical processes and different forms of racism, ranging from more overt ideologies of white supremacy to more insidious racisms that Pulido calls “evasion and indifference”—avoiding discussing histories of racism and being indifferent to harsh global, racial inequalities between north and south, white and nonwhite (118, 121–22). These different forms of racism increasingly work to shore up conceptual and material boundaries between the secured borders of the Global North and the places Naomi Klein (2016) describes as “sacrifice zones,” in which racialized bodies and the land they inhabit are rendered exploitable to the violent logic of extractive capitalism (n.p.).

Ashley Dawson (2017) provides a useful genealogy of Western security thinking that propagated this kind of “climate apartheid” (194). Dawson shows how, beginning in the 1990s, influential popular and academic writers in the West began to describe the figure of the environmental refugee in the Global South in terms of a security threat for the elite in the Global North (an argument perhaps most memorably captured by Robert Kaplan’s 1994 article in *The Atlantic*, “The Coming Anarchy,” which drew on racist and environmentally deterministic depictions of poverty in West Africa to warn readers of fast-approaching global threats). This line of thinking was soon adopted by official U.S. Department of Defense strategy and influential national security think tanks: Climate change became yet another justification for expanding the military industrial complex. As Dawson shows, this emerging climate security discourse isolated the source of the security threat in the Global South. It maintained racialized, colonial binaries that treated emerging “hotbeds” of climate-related unrest in the south as “isolated and self-contained entities, with no apparent relation to global systems of power and inequality, past and present” (210). This way of understanding the climate crisis continues to frame discussions of the growing number of climate migrants worldwide and the role of climate change in fueling social conflict and war. Crucially, this security approach to the climate crisis obscures more critical consideration of questions about how countries in the Global North might pay the “climate debt” they owe to people in the south.

The material and discursive global divisions that Pulido (2018), Klein (2016), and Dawson (2017) trace can collectively be thought of in terms of *racial geographies*. María Josefina Saldaña-Portillo (2016) argues that the concept of racial geography is “not simply a term for describing a given effect in space in racial terms.” Rather, she writes, “racial geography is a technology of power, and when used as an analytic and theory of spatial production it indexes the series of techniques used to *produce* space in racial terms” (17, emphasis added). As Saldaña-Portillo shows through a discussion of the ways in which the national geographies of the United States and Mexico have been shaped through racialized conceptions of Indians and the land they inhabit, racial geography points to the historical relations that have shaped widely held geographical ideas. Applied to the global geographical divisions that shape the drastic inequalities of vulnerability to the ravages of the climate crisis, the concept helps us to think through the historical traces that shape “*shared* perceptions of space, governed by learned conventions that have developed over more than five hundred years” of colonialism and racial capitalism (19, emphasis in original). It helps us, in other words, think about how geographical constructions of frontier and sacrifice zones are produced and normalized. Applied to the agri-fintech/security state nexus, the concept allows us to question how spatial depictions of “risk environments” or zones for financial experimentation operate through longer legacies of racial geographies of privilege and vulnerability. To begin this line of inquiry, the next section shows how the U.S. security state forecasts the compounding crises of food insecurity and climate change in terms of a national security threat.

Building Resilience in a World of Vulnerability

U.S. national security assessments increasingly identify the intersection of climate change and global food security as a crucial factor shaping the security landscape. During the Obama administration, publications from the National Intelligence Council (NIC), the U.S. intelligence agency responsible for long-term strategic analysis, began to describe climate change and food security as key national security issues. The NIC first examined the security implications of the global food system at a 2012 conference in Arlington, Virginia, at which agriculture and national security experts described food insecurity as a “threat multiplier”—the same term American defense officials have used to describe climate change.¹ Volatilities across the global food system, the NIC warned, might force countries to pull out of international food markets “where the United States has a major economic interest” (NIC 2012, 13). At the behest of Secretary of State Hillary Clinton and USAID director Raj Shah, the NIC continued to examine potential links between food security, climate change, and national security. The unclassified version of its 2015 global food security assessment declares that food insecurity in “many countries of strategic importance to the United States” is likely to increase and that the outlook for countries already experiencing food insecurity is likely to worsen.² The NIC (2015) argues that intensifying climate change effects such as drought, conflict, and diseases could compound each

other in the coming decade: “Warmer temperatures might lead to disease spread or prolonged drought, prompting rapid rural migration to cities. In turn, urban slums may become hotbeds for unrest” (1). In its 2016 assessment of climate change, the NIC (2016) further warns of the impending effects climate change would have on food security, suggesting that climate destabilization would soon lead to widespread social and political unrest. The report concluded that climate change was “likely to pose significant national security challenges for the United States over the next two decades” (5).

The NIC’s perspective on the looming threats of climate change and food insecurity is further detailed in its flagship quadrennial *Global Trends* publication. Titled *The Paradox of Progress*, the 2017 report outlines possible future scenarios in a world of ever more frequent shocks—things such as the Arab spring, the financial crisis of 2008–2009, and also large-scale droughts and flooding events (NIC 2017). Shortly after its release, the director of the NIC’s Strategic Futures Group, Suzanne Fry (2017), presented the report’s scenarios to a group of government officials and industry representatives at the Global Food Security Symposium in Washington, D.C. Appearing on a “food security is national security” panel, Fry told the audience that it wasn’t just countries such as Afghanistan and Somalia that should expect to see climate-triggered instability:

When we do our [global] risk analysis... I’m not kidding you—there’s something like two thirds of the planet that have risk conditions, literally about 120 countries... that have risk conditions that make them vulnerable to a shock that could tee off large-scale instability. You compound that with some pretty profound demographic shifts, technological shifts, and we have been living through climate shifts—and [then] the next phase of these climate shifts. So we’ve got a great deal of vulnerability in the world.

Fry stressed that the United States would not be able to isolate itself from this increasing vulnerability. Discussing American trade interests in particular, she urged that the United States would need to anticipate how climate events could set off shocks that could ripple through the global food system. The best way to manage these inevitable shocks, Fry argued, was to “invest in resilience in... both the economic systems but also the natural systems that allow for food security across the whole planet.”

Fry (2017) equates resiliency with strengthening international trade and describes resilience as something that can be cultivated in both “economic” and “natural systems.” In making this link, Fry’s use of resilience illustrates a kind of thinking that Jeremy Walker and Melinda Cooper (2011) trace to the concept’s origins at the intersection of ecology and neoliberal economic theory. Showing how the concept originates in the ecological theory of complex adaptive systems, Walker and Cooper argue that its sweeping uptake as a governing logic across

multiple sectors has much to do with how it aligns with the influential neoliberal economist and philosopher Friedrich Hayek's ideas that economic markets function as "complex ecological systems." Examining parallels between two key thinkers, one from ecology (Holling), and the other from neoliberal economics (Hayek), they show how these two strands of thought "have ended up merging in the contemporary discourse of crisis response through resilience" (Walker and Cooper 2011, 144). Importantly, Walker and Cooper argue that the concept itself works to normalize the neoliberal management of an increasing array of social life. Pointing to the "resiliency" that the concept itself has, they suggest that the political stakes surrounding the governmental uses of resilience are indeed high: "At stake in this tacit union [of ecological and economic thinking] is a governmental philosophy of nature and society so all-encompassing and resilient to critique that the effects of political interventions (and non-interventions) made in its name, even when catastrophic, seem as inescapable as the weather" (144-45). As I explore further below, we should ask how resilience normalizes particular approaches to risk management in the realm of food security.

Resilience is also a key concept that underlies the NIC's approach to forecasting the future through its scenario exercises. Although the possible futures it outlines are grim—financial collapses, atomic bombs, rampant cyberattacks all appear—*The Paradox of Progress* argues that the future will be much brighter for the resilient. Although the future will bring great danger, consequential trends such as climate change will also yield potential for positive outcomes:

In the emerging global landscape, rife with surprise and discontinuity, the states and organizations most able to exploit such opportunities will be those that are resilient, enabling them to adapt to changing conditions, persevere in the face of unexpected adversity, and take actions to recover quickly. They will invest in infrastructure, knowledge, and relationships that allow them to manage shock—whether economic, environmental, societal, or cyber.

Resilience is cultivated through investments through exploiting opportunity in a world of perpetual flux. Resilient "states and organizations" must adopt a stance of what Walker and Cooper (2011) call "permanent adaptability" to navigate—and, more importantly, become productive in—this world of ever-increasing risk (154).

As Walker and Cooper (2011) trace, resilience has become prominent in U.S. national security policy, especially with the post-9/11 rise of the Homeland Security apparatus. Following Inderpal Grewal (2017), this article asks how resilience thinking links neoliberalism and the contemporary U.S. security state. Grewal insists on theorizing the security state through attention to gender, sexuality, and race as well as attending to how the state's securitizing

impulse transcends militarism and incorporates other forms of governance, such as humanitarian or development projects. As Grewal writes, the security state “comes to appear—as the state effect theories suggest—as empire not just through military or global policing but also through ‘soft power,’ exercised transnationally by particular sets of subjects and processes that gain traction because of histories of white racial, masculinized sovereignty” (16-7). As the U.S. government agency charged with the “development” project, USAID has long been at the forefront of this kind of “soft power.” Recently, the agency has made “resilience thinking” a key “organizing concept.” The agency’s approach to resilience links humanitarian governance with neoliberal economic development as it seeks to “increase access to financial services” among people deemed to be the most vulnerable to recurrent “shocks” (USAID 2021). In this way, it epitomizes the intersection of humanitarian governance and neoliberalism that Grewal describes as a key feature of the contemporary security state. This link is especially clear in the policy and strategy documents outlining one of the agency’s core areas of focus: global food security.

Risk Management for Perennial Climate Shocks

The NIC’s prescription of resilience as the remedy for shock is central to the U.S. Global Food Security Act, which was voted into law in the summer of 2016 with nearly complete bipartisan congressional support. The law describes global food security as a vital national security interest to the United States (“H.R. 1567—Global Food Security Act of 2016”). As Jamey Essex notes in his history of USAID, since its Cold War-era origins, the U.S. “development” project has always been closely tied to national security interests. At the same time, Essex shows how in the post-9/11 era, as the agency has faced recurring threats of budget cuts, it has increasingly shifted toward an explicit “national security” framework. Alongside the State Department, USAID has “worked to align their core strategies as well as accounting and other internal practices with those of the Department of Defense” (Essex 2013, 147). Against this background, the Global Food Security bill’s framing as “national security” is more than rhetorical flourish. It reflects a key way that the security state is integrating what Essex calls the “3 Ds” of American National Security: development, diplomacy, and defense. The bill’s national security framing also proved to be pivotal for getting it passed. At a moment when Democrats and Republicans in Congress rarely agreed on anything, “food security as national security” was something nearly everyone could get behind.³

A central policy objective of the law is to “build resilience to food shocks among vulnerable populations and households while reducing reliance upon emergency food assistance” (“H.R. 1567—Global Food Security Act of 2016,” sec. 2). The five-year Global Food Security Strategy (hereafter, strategy) that outlines how the policy will be implemented describes “strengthened resilience amongst people and systems” as one of its three organizing objectives (USAID 2016, iii). As the strategy details, building resilience among those it deems most

vulnerable is essential as those populations face recurring droughts, floods, and price shocks. Much like the NIC's scenario forecasts, the strategy describes these "recurrent shocks and stresses as *perennial features*, not as unanticipated anomalies" (18). In this way, it depicts climate change as precipitating a world of never-ending shock—one that demands farmers adopt a "culture of resilience" (Walker and Cooper 2011, 154).

The strategy indicates that the road to resilience is paved with financialized approaches to development. It declares that breakthroughs in digital technologies such as mobile money have made it more feasible to bring smallholder farmers into financial markets, allowing them to "both weather shocks and seize economic opportunity" (USAID 2016). Describing a market potential of "an estimated US\$210 billion in demand for smallholder finance," the strategy describes "tailored financial services, products, and systems" as key aspects of its objectives. Along these lines, it calls for rolling out more financial tools such as crop insurance, credit, and money transfer technologies. Whereas the small number of finance efforts aimed at smallholder farmers has been primarily public sector-led, the strategy declares that partnering with the private financial sector "will be particularly essential to promoting sustainable development of the agriculture sector" (24). Importantly, the strategy targets not only individual smallholder farmers, but also governments' financial policies—what it dubs "resilience and risk management policy." This is a key element of the strategy and the Global Food Security Act more broadly: Countries partnering with U.S.-led development projects must adopt policies that foster an "enabling environment" for private sector investment (30). Combining the logic of humanitarian governance with neoliberal economic development, American "soft power" works to open up markets for international capital. (As Essex and others show, U.S. foreign policy in its neoliberal orientations has become increasingly agnostic to the question of whether or not a particular opening up of a foreign market directly benefits a U.S.-based firm.)

The concept of risk management is central to the strategy's financialized approach to resilience. One of its objectives listed under "resilience" is to "improve proactive risk reduction, mitigation, and management" (USAID 2016, 18). It describes risk in terms of both "potential and realized" and lists "drought, flood, price shocks, pests, and diseases" as examples. It describes crop insurance technologies such as index insurance as key risk management tools. Risk is a crucial term in the strategy—appearing as both something to be avoided, but also something to be transferred or taken on. Similarly to "resilience," "risk" can be a slippery term. Throughout my interviews with officials from development, agribusiness, and philanthropy organizations involved in development projects in eastern Africa, I have been frequently reminded that smallholder farmers are "risk averse." A truism in development discourse holds that, given their vulnerability, smallholder farmers avoid risk; they are, therefore, unlikely to spend much on seeds or take loans. As one agricultural economist detailed, "Risk is an impediment to technology investment" (Author interview, Syngenta Foundation,

2015). As a remedy to this barrier, index insurance and other financialized climate adaptation technologies have been promoted as a way to “derisk” the process of providing loans to smallholders, thereby making it easier for lenders to extend credit to farmers and for farmers to invest in agricultural inputs such as hybrid seeds and fertilizer (“De-Risking Agricultural Investment in Africa” 2018). Frequently, index insurance companies, such as ACRE and Pula, directly market their products to banks and microfinance institutions as tools that will enable them to extend credit to farmers previously deemed too risky to offer loans—an approach Pula’s website makes clear: “We increase credit providers’ appetite for lending to farmers by offering a safety net” (“About Us,” n.d.).

In the context of frequent droughts and increasingly unpredictable rainfall patterns, “climate risk” is obviously something smallholder farmers want to avoid. Yet much of the discourse about index insurance describes risk as a kind of untapped opportunity. Understanding how the term takes on both of these connotations demands coming to terms with the way risk becomes a commodity. Jonathan Levy’s (2012) history of risk is especially useful for this task. Levy describes an international trade in “risks” that emerged in eighteenth-century maritime insurance. He shows how merchants essentially dealt with two kinds of commodities during their voyages across the Atlantic: the first were physical commodities, whether cotton or the human cargo of slaves, and the second were financial commodities, or “risks,” that quantified the possibility of losing their physical commodities. Importantly, this second commodity could be separated spatially and temporally from the original cargo that it secured and traded in financial markets. This is the basis for the global trade in risk that continues today. As I mentioned previously, most of the risk in index insurance schemes is transferred to global multinational reinsurance companies such as SwissRe and MunichRe. This risk also holds the potential to be further pooled together as tradable debts—or securitized—in the form of insurance-linked securities. Financial analysts see the growth of index insurance schemes such as the ones developed by ACRE and Pula becoming increasingly relevant to global securities markets (Artemis 2014).

Understanding how risk functions as a commodity—and as the basis for financial securitization—is crucial to understanding the logic of resiliency as risk management that underpins the Global Food Security Act and index insurance companies. Viewed this way, we can get a better understanding of how “investment in resilience” means that farmers “take on more risk”—in the form of both insurance and debt from loans taken out to purchase agricultural inputs such as hybrid seeds. Risk as harm is meant to go down, for sure. But risk as commodity is meant to perpetually expand. Tapping into pools of uninsured risk demands farmers adopt new approaches to risk. Because index insurance is based upon statistical measurements at the weather station or satellite, there is always the possibility of discrepancy between what the index “reads” and what actually happens in farmers’ fields. This means that, to transfer the risk associated with drought and crop loss onto an insurance market, farmers must

take on the risk that what happens in their field will not correlate with the “trigger point” on the index.

Because of this discrepancy, Leigh Johnson (2013) points out, the insurance coverage offered by index insurance is always only partial. Economists call this risk that farmers will experience drought but still not receive a payout “basis risk.” (One economist I interviewed put it in more blunt terms: “It’s when the worst thing that could happen to you gets worse” [author interview, Development Organization, January 20, 2015].) Because of the issue of basis risk, index insurance creates a twofold dynamic of risk: farmers both transfer risk to national and international insurance markets and take on the risk that they will face a drought and not get paid. In this process, farmers become not only a particular type of agricultural producer (as they are brought into commodity chains and begin purchasing credit, inputs, and seeds), but also a financial consumer—what Johnson calls “risk-bearing subjects.” She calls this process by which markets for financial products are expanded by both bringing farmers in and simultaneously excluding them from coverage, “expansion-by-exclusion.” “Making security accessible to the poor,” Johnson writes, “also requires them to bear some of the risks themselves” (2013, 2667). The U.S. Food Security Strategy adopts a similar financialized logic, declaring, “Resilience... is necessary before individuals can afford the risk inherent in increasing investment in their farms” (USAID 2016, 8). In this way, index insurance promises to be a tool that offers farmers both “protection” and “promotion”—it gives them ways to transfer risk but also take on more risk as they invest in credit and agricultural inputs (Greatrex et al. 2015). This kind of preemptive risk management promoted by the strategy then, somewhat paradoxically, increases risk. This was made clear when I interviewed a Syngenta Foundation official about the index insurance model that developed into ACRE and Pula. “As farmers invest,” this official explained, “their risk goes up” (author interview, Syngenta Foundation, January 22, 2015).

As Johnson (2013) and others point out, because index insurance relies upon indexes to calculate insurance payouts, it should not really be called *insurance*. More accurately, the financial tool is a *derivative*: “a contract that establishes a claim on an underlying asset—or the cash value of that asset—which must be executed at some definite point in the future. The underlying asset could be a commodity, such as wheat; or another financial asset, such as a bond; or a financial price, for example the value of a currency; or even an entirely non-economic entity like the weather” (Lapavitsas 2013, 5). Because derivatives opened up the possibility for financial speculators to “bet” upon the rise and fall of an increasing array of assets, they have been at the forefront of the financialization of the global economy since the 1990s. Index insurance functions as a weather derivative in that the contract between farmers and insurance companies is essentially a bet on the outcome of uncertain future climatic events (Cooper 2010). The difference in future values between a scenario in which the farmer receives a payment versus one in which the farmer does not forms the basis for the derivative contract—and for future hedging upon that possible change.

As Johnson (2013) makes clear, this experimental technology is decidedly aimed at particular *geographies*. She quotes an industry official who explains, "In developed countries, we don't sell derivatives to individuals. This may be the best we can do in the developing world, but it has implications for consumer protection" (2665). This kind of market segmentation, in which more experimental financial tools are deemed only appropriate for the developing world, points to some of the broader ethical questions about the ways in which these technologies might extend legacies of inequalities and violence based upon the marking off of particular people and places as not yet developed. Given the criticism about rampant financial speculation and unregulated derivatives markets that followed the 2007-2008 global financial crisis and the related food crisis, one might think that there would be some caution on the part of international development organizations about the possibility of "derivatives for development."⁴ Yet mainstream development organizations such as the World Bank, USAID, and CGIAR promote index insurance as a socially just means to address poverty and climate change. How could the financialization of the livelihoods of those most vulnerable to climate change be so uncritically promoted—particularly in the wake of the financial/food crisis? Could this be entirely a case of techno-financial Utopianism? This is surely part of index insurance's appeal. But it does not go far enough in explaining the exuberance for a financial fix so soon after financial meltdown. Examining how global food security policies and financialized climate risk management are shaped through racial geographies sheds light on why such questionable development practices move forward with little criticism.

Racial Geographies of Financial Experimentation

Companies such as ACRE and Pula operate through a frontier logic. At the forefront of agri-fintech, they expand sites for profit making along the "risk frontier" of previously uninsured farmers (Gabor and Brooks 2017, 429). And their financialization of "climate risk" constitutes a frontier market for the companies and their multinational reinsurance and agricultural input company partners. As Raj Patel and Jason W. Moore (2017) write, frontiers are essential to capitalism. "Capitalism," they argue, "not only *has* frontiers; it exists only *through* frontiers, expanding from one place to the next, transforming socialecological relations, producing more and more kinds of goods and services that circulate through an expanding series of exchanges." Patel and Moore explain how frontiers are sites at which the "stuff" that generates value for capital—nature, workers, and energy—is put to work "as cheaply as possible" (19). As they show, it is this cheapening of lives, land, and labor that generates profits for capitalists. This extractive relationship, central to capitalism, depends upon uneven power relations. Race is a key modality through which those relations are produced and exploited. American studies scholars following Cedric Robinson (1983) and other thinkers in the Black radical tradition have generated fruitful work using the analytic of *racial capitalism*. As Jodi Melamed (2015) makes clear, the term is meant to describe *all* capitalism as racial capitalism. As she argues, "Capital can only be

capital when it is accumulating, and it can only accumulate by producing and moving through relations of severe inequality among human groups—capitalists with the means of production/workers without the means of subsistence, creditors/debtors, conquerors of land made property/the dispossessed and removed.” These divisions, Melamed writes, “require loss, disposability, and the unequal differentiation of human value, and racism enshrines the inequalities that capitalism requires” (77). Along these lines, scholars examine how this kind of unequal valuation of human lives is central to financial capital, ranging from the racist mortgage-lending policies that contributed to the 2008–2009 financial crisis to the exploitation of other “subprime,” racialized populations in microfinance projects in the Global South (Chakravartty and Ferreira da Silva 2012). Building upon this work, this section considers how index insurance projects extend through geographical constructions that depict Africa as a unique, singular place—a kind of “risk environment” where crisis is endemic. I tie these racial geographies to the ways in which agri-fintech constructs new kinds of “subprime” populations in which to invest while extracting profits largely for the benefit of multinational agribusiness and reinsurance corporations.

Geographical representations are always both symbolic and material. We know the world through visualizations and maps, yet we make our way through the material world based upon what we know from representations. As Saldaña-Portillo (2016) describes, racial geographies represent ongoing, dynamic understandings of space shaped across history through cultural and political ideas (16–23). In this sense, history and geography are always intertwined and always play an *active* role in shaping how we relate to particular places. “Geography,” Saldaña-Portillo writes, “is not only a discipline for mapping the world to be seen: it is also a way of disciplining what we see, of disciplining us into seeing (and knowing) mapped space as racialized place” (18). This relationship between seeing and knowing “mapped space” in terms of racialized conceptions is especially applicable to Western understandings of Africa. Indeed, there is a rich archive of Western cultural mappings and depictions of Africa—from Joseph Conrad’s *Heart of Darkness* (1899) to the pages of *National Geographic* to the web pages of humanitarian organizations—that construct the continent as a unique, separate geographical space (Gabay 2018; Lutz and Collins 1993). As Kaiama Glover (2017) argues, these geographical depictions, so common in journalistic and humanitarian discussions of Africa, work to draw clear lines between “us” and “them.” They draw sharp material and ideological borders through which “the ‘Afro-’ is rendered forever fixed in dystopian time through a disavowal of historical relationships that implicate the West” (241). These kinds of geographical descriptions are commonplace in the discourses of agricultural development and agri-fintech. A striking example comes from the cover of an influential European-based agricultural development organization’s 2015 “Agriculture for Impact” report (featuring a profile of ACRE). Under the headline “The Farms of Change: African smallholders responding to an uncertain climate future,” a map of the continent, rendered in heat-map orange hues, depicts Africa

as a dry, cracked, and lifeless parcel of Earth [Figure 1]. This kind of visualization must be understood as part of more long-standing racial geographies that construct Africa in terms of a dehumanized, lifeless space. As Glover writes in her analysis of the racist narratives underpinning humanitarian discourses about Haiti and Africa, geographical depictions of Africa as devoid of life relegate “brown bodies to dehumanized spaces the world over” while suggesting “that survival in such inhuman spaces proves the nonhumanity of their inhabitants” (243). Echoing a theme explored by Sylvia Wynter and Katherine McKittrick, Glover points to the ways in which Western geographical constructions of Africa dehumanize its inhabitants through rendering it a space of the “racially condemned” (McKittrick 2013, 7). For the purposes of my discussion, the key point to consider is the way in which these and so many other spatial depictions of Africa *normalize* it as a place of perpetual crisis—a place where “disaster is a state of being, as opposed to an event” (Glover 2017, 242). The Global Food Security Strategy’s framing of shocks as perpetual events for smallholder farmers, like the NIC’s description of Africa in terms of a “zone of experimentation,” indicate the need to ask how constructions of Africa might work to normalize this kind of framing (NIC 2017, 119).

How might the “developing world only” practices of agri-fintech be normalized through geographical understandings of the agri-fintech frontier? In her compelling analysis of how microfinance expands “poverty capital,” Ananya Roy (2010) describes how microfinance operates through geographical constructions of the frontier. She describes microfinance as “the new subprime frontier of millennial capitalism, where development capital and finance capital merge and collaborate such that new subjects of development are identified and new territories of investment are opened up and consolidated.” Emphasizing the geographical imaginaries that shape donor and microfinance institution’s conceptions of the subprime subject, Roy makes clear the relationship between an expansive project of poverty capital and the “opening up” of frontier spaces. Through this geographical process, the subjects of development of global microfinance are viewed as “subprime borrowers” that are deemed high risk: “Their financial inclusion takes place on subprime terms” (218). In the 2007–2008 financial crisis precipitated in part by a mortgage-backed securities crisis, race proved a critical factor in not only constructing the category of “high-risk” borrowers, but also in allocating blame after the housing crisis. Chakravartty and Ferreira da Silva (2012) argue that popular media accounts of the housing crisis as the “subprime crisis” worked to lay the blame for the crisis on “subprime” racialized populations rather than the bankers who recklessly gambled on their exploitation (363). Extending Roy’s theorization, they insist that the figure of the “subprime” in both the United States and Global South should be understood “as a racial/postcolonial, moral and economic referent, which resolves past and present modalities and moments of economic expropriation into *natural* attributes of the ‘others of Europe’” (364, emphasis in original). Racial logics create particular places and people as naturally inclined to vulnerability and “subprime”

economic statutes. The figure at the center of agri-fintech's "financial inclusion" efforts across Africa—the homogenous "African smallholder farmer"—can be thought of as a global subprime.

This "subprime" logic materializes in index insurance through a range of ways in which development experts seek to train farmers to take on risk. In some instances, the insurance companies find that it makes more sense not to tell the farmers that they are being insured: to simply insure the creditor or agricultural input supplier. This is surely the logic of the subprime borrower: farmers don't understand risk; leave the financial reasoning to lenders and agribusinesses. This, too, builds upon racial trajectories in which the "others of Europe" have been understood as subjects "without self-determination" (Chakravartty and Ferreira da Silva 2012, 369). Thus, development organizations deploy a range of efforts to both instill a different approach to farming and cultivate a new ethic of resilience in these smallholder farmers. As the Global Food Security Strategy argues, farmers must become more resilient to take on more risk. What financialized approaches to managing climate risk and the U.S. Global Food Security Strategy have in common is that they construct the subjects of development—smallholder farmers—in terms that suggest their unique vulnerability: their "subprime" status. This construction, moreover, is tied to the racial geographies through which agri-fintech and the security state understand the crisis.

Zenia Kish and Justin Leroy's (2015) work is helpful for understanding the connections between this new racialized subprime figure and histories of finance. As they argue, "Finance has historically developed new innovations through arenas of experimentation in which privatized control over racialized bodies and life possibilities expand the boundaries of financial value" (632). They connect contemporary financial instruments, such as "social impact bonds" and "development impact bonds," which allow third-party investors to make money through funding social programs that serve impoverished communities, to the financialization of slavery in nineteenth-century Britain and the United States. Tracing parallels between social impact bonds and the practices that financialized the slave economy, they "examine [these] seemingly unrelated modes of investment to demonstrate that racialized life has repeatedly served as the basis for development of new methods to assess and augment the future value of particular lives" (633). In this way, race has been "a tool with which financial innovators elide the ethical concerns raised by financial practices" across different historical contexts (646).

Although index insurance functions as a derivative rather than a bond, its financial experimentation relies upon the kind of revaluation of racialized life that Kish and Leroy (2015) examine in social impact bonds. Farmers on the frontline of climate chaos become sites for financial investment, and this investment process inevitably leads to some farmers being "excluded" from actual security (Johnson 2013). Yet, across much of the discourse on agri-fintech, potential ethical concerns about "derivatives for development" schemes are largely

sidelined. I suggest that this reasoning has much to do with the ways in which racial geographies naturalize particular places as perpetually “at risk.” As one of the economists I interviewed conveyed, most index insurance schemes are, perhaps unsurprisingly, set up to minimize the potential loss exposure for the reinsurance companies. As this official conveyed, the contract terms were largely set up to benefit the multinational corporations calling the shots (author interview, Syngenta Foundation, January 22, 2015). So, although the narratives of helping farmers deal with their increasing vulnerability drove the expansion of these projects, in many ways, the projects are set up in ways that maintain vastly unequal power imbalances between people in the Global North and South. Following Kish and Leroy, we should consider how these experimental practices on the agri-fintech frontier expand through racialized understandings of “at risk” populations and places. Furthermore, we need to examine in what ways these practices are normalized in ways that prohibit more critical questions about climate adaptation in a world of vastly unequal vulnerabilities to the impacts of climate change along lines of race, class, gender, and nation. These questions might indicate, for example, how alternative insurance mechanisms could be built on the premise that countries in the Global North owe countries in the South an “ecological debt.” And what might a climate adaptation finance mechanism that did not prioritize the profits of global financial institutions look like? De-naturalizing the prevailing racial geographies that inform so much of the conversation around climate adaptation would clear the ground upon which to ask these kinds of questions. Yet the dominant financialized/security framing of the climate crisis continues to render them unaskable. To further examine how this framework gains and maintains traction, the final section turns to an analysis of how the “resilience thinking” of agri-fintech and the Global Food Security Strategy also aligns with the more militarized aspects of the American security state.

“The Battlefield of Tomorrow, Today”

During her aforementioned remarks at the Global Food Security Symposium in the spring of 2017, the NIC’s Fry spoke about the unpredictable nature of large-scale political, social, and ecological instability. She told the audience that a future of “greater exposure to climate risks and extreme weather” would likely bring not only slowly developing climate events, but “really dramatic, sudden shock type climate phenomena” that could bring “catastrophic” changes to global food markets overnight. These “climate shocks” were likely, but Fry insisted that the NIC could not accurately predict where they might emerge.

We are not able to predict the location, the geography of where these climate events will happen. We know they are going to happen. We have a sense, probably a better sense in looking out decades, of the type of challenges to come. What we don’t have a better sense of is the

near-term prediction of where these events will occur. And I think the takeaway from that, again, for me, is about building resilience into both the natural and economic systems here.

The uncertainty of where catastrophic climate events will occur demands a resilient state defined by an adaptable, security-focused approach. To be clear, the “we” Fry suggests here is the U.S. security state. Although the NIC’s scenario planning might imagine particular “hot spots” of vulnerability likely to descend into chaos, climate change presents an unprecedented *global* security threat. The framework of resilience, rooted in the ecological understanding of complex systems, provides an approach to security that aligns with the future of inevitable, yet unpredictable shock on a global scale (Walker and Cooper 2011). The resilient state Fry conveys here is charged with policing global food/climate insecurity and building resilience into global markets.

Appearing alongside military officials on the panel, Fry’s remarks conveyed imperial assumptions about the American security state’s responsibility to secure the (unknowable, always in flux) frontier of climate change and global food markets. This logic of fighting an unpredictable threat that might emerge “overnight” anywhere around the globe justifies the expansion of American empire. Along these lines, the NIC (2017) describes the threat of climate change and global terrorism in similar terms. It constructs both as perpetual kinds of risk environments that call for further management. In its discussion of the new global realities of power, *The Paradox of Progress* argues that dispersed power and the increase of nonstate actors such as the Islamic State have led to a radically new global geopolitical landscape. These dispersed threats make “securing and sustaining outcomes—whether in combatting violent extremism or managing extreme weather” increasingly difficult. Therefore, it suggests that the United States needs to adapt to become a more “resilient” state, one that can cultivate resilience to adapt to these changes: “Sustaining outcomes will require a constant tending to relationships” (28). Using the “ecosystemic” language of complex adaptive systems thinking, the NIC paints a geopolitical future in which both defense and development are oriented toward a world of constant crisis (Cooper 2010). In this way, both the global war on terror and the fight to manage the climate crisis demand preemptive action to secure the frontier.

The NIC’s call for developing a more resilient security state and the emerging agri-fintech development paradigm occur during a time in which the U.S. military is expanding its reach in Africa. Although the continent has long been considered “off stage” in the American imperial theater, the past decade has seen a steady buildup of military operations and proxy wars across the continent. Investigative reporter Nick Turse has tracked U.S. military expansion in Africa since 2012. Through a series of reports, Turse (2015) shows a dramatic expansion in U.S. military presence in Africa—fighting proxy wars, engaging in small-scale counterterrorism missions, training African countries’ militaries, and conducting drone operations—during the Obama administration. A quote Turse includes in

the introduction to a book of his reporting demonstrates how the U.S. strategic focus toward Africa has changed. A group of U.S. special forces officials in 2013 quoted an oft-repeated phrase from their commander: "Africa is the battlefield of tomorrow, today." A special forces official continued, "I couldn't agree more. This new battlefield is custom made for [Special Operations Command] and we'll thrive in it. It's exactly where we need to be today and I expect we'll be for some time in the future" (3). This official's predictions have borne out in the time since as the United States continues to expand its military presence across the continent.

Shortly into the Trump administration, in early 2017, Turse (2017) published details from internal Pentagon reports that describe an extensive range of secret military bases and "forward operating locations" across the continent. As Turse's work shows, the U.S. military machine positions itself to be able to conduct surveillance and embark in counterterrorism efforts across the continent. Several African countries represent strategic hubs for U.S. military operations in the region and beyond. As the NIC predicts climate change-caused instability to exacerbate political and social instability across much of Africa, clearly the United States aims to have a significant military presence on the continent. By late 2018, Turse reported that the United States had engaged in more than 30 named missions and activities across the continent since 2015. Although the Middle East had more troops and more troops engaged in combat, Africa had actually been the region with the most U.S. military operations. Largely hidden from public debate, Africa has fast become the site of a "sprawling, labyrinthine, and at times chaotic shadow war." As African countries emerge as new frontlines in the global war on terror, the United States sends more special operations forces to Africa than any other region: "More than 14% of US commandos deployed overseas in 2019 were sent to Africa." As of 2019, American Special Operations forces were engaged in 22 African countries, conducting low-scale counterterrorism combat missions and training forces in partner countries (Turse, Mednick, and Sperber 2020). As Turse notes in a recent report that uncovered previously classified information about the extent of U.S. involvement, although the U.S. has poured billions of dollars into security assistance and established a network of 29 bases that spans the continent, violence and warfare across the continent have increased alongside the American buildup.

Evoking a new kind of "containment" approach to national security, the Trump administration's official "Africa strategy" identified a rising, "predatory" influence of China and Russia across the continent. Speaking on the occasion of the release of the administration's Africa strategy, U.S. National Security Advisor John Bolton (n.d.) argued that China and Russia's expansion in Africa "stunt economic growth in Africa; threaten the financial independence of African nations; inhibit opportunities for U.S. investment; interfere with U.S. military operations; and pose a significant threat to U.S. national security interests." To better dominate what it dubs the "great power competition" with China and Russia, the Africa strategy called for ramping up U.S. investments across the

continent, prioritizing U.S. commercial interests, and expanding military support operations with African governments.

Clearly, the memorable quote attributed to the leader of U.S. special forces in Africa—calling the continent “the battlefield of tomorrow, today”—conveys the kind of geopolitical framework the Trump administration embraced with its Africa strategy. But this viewpoint on Africa also reflects a kind of preemptive logic that Randy Martin (2007) argues is central to both financial risk management and American empire in the age of the perpetual war on terror. As Martin explains, high finance and American warfare share a preemptive, securitizing logic, in which “potential threats are actualized as demonstrations of the need for future intervention. Preemption is the temporality of...the political and moral economy of securitization, the future made present” (18). Martin likens the shift toward a counterterrorism mode of U.S. warfare—dispersed warfare fought by small groups of soldiers—to the logic of the financial arbitrageur who leverages volatility in risk markets for profit. Whether in financial markets or the hinterlands of the global war on terror, military leaders and the masters of finance perform parallel “arbitrage”: Special forces exploit “small variations in the environment to achieve large-scale gain,” and bankers and hedge fund managers use “quick shifts in [the] deployment of capital to leverage larger money-making effects” (10). Both demonstrate the temporality of the derivative: a present ruled by the promise of future instability.

Climate change and terrorism both raise the threat level for unpredictable “shocks.” Both call for a particular approach to risk management akin to what Walker and Cooper (2011) call a “culture of resilience”—an acceptance of perpetual flux in environmental and social “systems” and an adoption of practices ordered around fostering “permanent adaptability in and through crisis” (152). In this way, we can see a parallel between the U.S. pivot to Africa and the ramping up of development efforts based upon financial logics and practices. Both position Africa as a space of perpetual crisis that demands securitization. Resilience as both a security strategy and development strategy calls for cultivating resilient governments and individuals. In the process, geographical peripheries of global agri-fintech markets and U.S. warfare become productive frontiers for agribusiness, financial capital, and the expanding security state. Although the agri-fintech projects and their agribusiness partners couch their efforts in terms of an entrepreneurial humanitarianism—as helping the African smallholder access markets and approach farming as a business—these developments are linked to ongoing trajectories of racialized empire. That the wave of commercial and development efforts working under the banner of the “Green Revolution in Africa” is increasingly oriented around the development/finance nexus has been well covered. But we need also attend to the ways that this intersection articulates with racialized finance and racialized empire—and how these, in turn, are mutually formed.

Conclusion

In the fall of 2018, President Trump signed the U.S. Global Food Security Reauthorization Act into law, extending the Global Food Security Strategy and programs through 2024. Although the Trump White House consistently threatened to cut funding for USAID (a move that was rejected by Congress each year, but one that nonetheless precipitated widespread reforms throughout the agency), the agency's food security program continued to draw overwhelming bipartisan support in Congress during the Trump years. Under an administration that demanded government agencies show how they put U.S. interests above all else, USAID shifted to a development agenda increasingly defined in line with Trump's "America First" doctrine. This manifested in a shift toward framing its development work in more starkly defined political language, in particular arguing that U.S. projects constituted a more democratic alternative to China's "authoritarian" development efforts, as Mark Green, the USAID Administrator from 2018 to 2020, conveyed (USAID 2019). The agency also opted for a sweeping transformation by redefining its core functions in terms of "private sector engagement." Couched in terms of helping partner countries become more "self-reliant," the 2018 Private Sector Engagement Policy demands that USAID programs engage with private sector entities in all aspects of their work (Saldinger 2018). This is an example of the security state working at the development/finance nexus to expand American economic interests. USAID's approach surely aligns with the resilience-as-risk-management approach that I have traced here. Along these lines, agri-fintech projects such as ACRE and Pula continue to expand. As I argue, these efforts reproduce long-standing asymmetries of power that continue to position particular people and places as perpetually "at risk" while, at the same time, extracting wealth (here, in the form of pooled, financialized risk) primarily for the benefit of corporations in the Global North. I have also stressed the importance of reading the agri-fintech frontier in the context of U.S. empire. As the U.S. security state pivots to Africa, the kind of finance/security/development nexus mapped here will become increasingly relevant to critical conversations about the future of development in an age of climate crisis.

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Notes

1. NIC 2012, 13. Christian Parenti (2012) details the Pentagon's description of climate change as a "threat multiplier" in *Tropic of Chaos*.

2. NIC 2015, i. An NIC official that spoke at the 2016 World Food Prize Conference in Des Moines, Iowa, mentioned that these NIC assessments were unclassified derivatives of classified reports. Author field notes.

3. Speaking at a symposium at the Center for Strategic and International Studies in 2016, Adele Adeyemo, the deputy assistant to the president and deputy national security adviser for international economics, stated that the national security framing of the Global Food Security Act had been crucial for getting it passed with sweeping bipartisan support. See CSIS (2016).

4. On the connections between financial speculation and global food price crises, see Ghosh (2009) and Isakson (2015).

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