Africa and the Americas in the Columbian Exchange: an Interview with Judith Carney

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In these trying times, when the pandemic has kept us apart from family and friends, we have also learned to connect and work together in new ways. This interview, a collaborative endeavor by researchers from Brazil, Argentina, Colombia and the US, is one such effort. In contrast to the social distancing that we daily endure, we are grateful and honored to have had this opportunity to come closer to a remarkable and prolific scholar, Professor Judith Carney.

Since 1998, Professor Carney has been a faculty member of the Department of Geography of the University of California, Los Angeles, where she is also affiliated with the Institute of the Environment and Sustainability, the Center for Tropical Research, and the International Development Studies and African Studies programs. She completed her M.A. and Ph.D. at the University of California, Berkeley, and her undergraduate studies at Michigan State University. With close to a hundred scholarly publications, she was honored, in 2020, with the Distinguished Historical Geographer Award by the Historical Geography Specialty Group of the American Association of Geographers. This is just the latest in a long series of accolades, including being elected a fellow of both the American Academy of Arts and Sciences and the Association of American Geographers.

Her interdisciplinary research delves into the relationships between culture, territory, and environment. These themes were central to her dissertation, entitled "The Social History of Gambian Rice Production: An Analysis of Food Security Strategies." She has also woven together the fields of ecology, environmental history, historical geography, food studies, and gender to shine light on cultural legacies of Africa in the Americas.

Among her award-winning publications, *Black Rice: The African Origins of Rice Cultivation in the Americas* (2001) and *In the Shadow of Slavery: Africa's Botanical Legacy in the Atlantic World* (2009, with Richard Nicholas Rosomoff) stand out. (The former received the James M. Blaut Publication Award, from the Association of American Geographers, and the Melville Herskovits Book Award, from the African Studies Association; the latter was awarded the Frederick Douglass Book Prize by the

Gilda Lehrman Center for the Study of Slavery, Resistance, and Abolition.) In these works Professor Carney pushes Africa toward the center of the Columbian Exchange, a role that had long been overlooked. *Black Rice*, for example, explores the domestication of rice (*Oryza glaberrima*) in West Africa, and demonstrates how this species, along with the embodied agricultural knowledge of enslaved West Africans, lay the foundations of rice cultivation in the New World. Rice was just one of a host of African contributions to the foodways of the Americas. From okra and black-eyed peas to plantains and yams, Africa's botanical legacy enriched diets, shaped identity, and supported empire. Professor Carney has helped show us the extent to which the history of Latin America not only rests on the forced labor of enslaved Africans, but also on the rich contributions they made to New World diets and agriculture.

Placing her research in broader perspective, this interview helps us better understand the trajectory of this distinguished scholar.

Interview

You did your Ph.D. in geography at UC Berkeley in the 1980s, when the Berkeley School of Geography had waned (although professor James Parsons was still around) and political ecology was taking off. How did your experience at Berkeley shape your research topics and approaches?

The 1960s and 1970s launched a period of dramatic environmental transformations across the global South. Dams and roads were aggressively developed throughout remote areas to encourage mining, oil exploration, logging, ranching, agribusiness, and colonization schemes. Multilateral financial institutions and bilateral aid agencies pitched these economic growth strategies as remedies for income inequality, promising revenue streams that would trickle down to benefit society's disadvantaged. Among the countries implementing these strategies were many under military rule, which constrained a citizenry's ability to protest policies that led to environmental degradation or undermined the jurisdiction of indigenous peoples to contest "development" of their territories. Today, scholars refer to this era of unprecedented resource exploitation across the globe as the Great Acceleration. I

began the PhD program at Berkeley as part of a generation of graduate students in Western democracies who felt compelled to bear witness to the transformations underway in the global South and to voice solidarity with those unable to exercise their own political rights in areas of the world where the policies of our governments and institutions were complicit in human rights and environmental abuses.

Prior to Berkeley, I had been out of school for a number of years. But in that time, I read the academic literature widely and traveled throughout Latin America, which led to my initial doctoral focus on the region. UC Berkeley was one of North America's preeminent research universities on Latin America. Professor Woodrow Borah in History had advanced scholarship on the demography of pre-Columbian populations of the Americas by documenting both numbers much higher than previously estimated and the staggering toll of introduced diseases. Professor Herbert Baker, an evolutionary ecologist, along with colleagues in other natural science departments offered graduate courses on food plants and civilization, forest ecosystems, tropical soils, and integrated pest management that welcomed students from other academic disciplines. Also indispensable for our training was Professor Alain de Janvry's agricultural economics courses, which attracted an multidisciplinary group of graduate students interested in development issues and Latin America. Academic symposia and luncheon talks were avidly attended by PhD students from across the Berkeley campus.

Under Carl O. Sauer's earlier guidance, Berkeley Geography had become the preeminent university department for geographers interested in Latin America. There was a strong research tradition on the importance of studying cultural environmental relationships, indigenous knowledge, food systems, soils, and traditional resource-management practices in the humid tropics—topics that came to define the field of cultural ecology that Professors James J. Parsons, Hilgard O'Reilly. Sternberg and Barney Nietschmann—all Latin Americanist geographers—encouraged. I enrolled as a graduate student in a Department and campus community that emphasized holistic, interdisciplinary learning, and engagement with topics that spanned the cultural, environmental, and natural science disciplines.

Figure 1. Matopiba: research in Tabatinga, Pará, Brazil with ribeirinhos, 1996..

Source: Judith Carney personal archive

But what made the intellectual community at Berkeley so ultimately enriching was the collective impetus to study and assess the wide-ranging human-environmental changes underway in the global South. The rural worlds our professors researched were rapidly vanishing. The environmental transformations wrought by the Great Acceleration raised concerns about the sustainability of tropical ecosystems (although these terms had yet to be coined) and lifeways of their traditional inhabitants. During the decades of the 1970s and 1980s, Berkeley Geography 's longstanding emphasis on fieldwork attracted graduate students prepared to make this commitment at a time when the need for empirical research was paramount. Importantly, their research drew attention to the power relations within and between societies that privileged specific types of land use over another. Out of this deep

engagement, Berkeley Geography emerged a formative center for the emergence of political ecology with its emphasis on history, power relations, and scale for understanding environmental change. And among the many distinguished geographers with whom I shared my tenure there are many who went on to make their own unique contributions to the field: Michael Watts—who joined the Berkeley faculty in 1979—and among many others, Susanna Hecht, Karl Zimmerer, Tom Bassett, Michael Storper, Matthew Turner, Jesse Ribot, and Lucy Jarosz.

GIVEN YOUR FOCUS ON ISSUES OF AGRARIAN CHANGE, FOOD SECURITY, AND GENDER IN WEST AFRICA, HOW DID YOU DEVELOP AN INTEREST IN THE COLUMBIAN EXCHANGE? AND WHAT WAS THE EXPERIENCE LIKE MOVING FROM FIELDWORK TO THE ARCHIVES?

I completed my M.A. in the hinterland of Maranhão, Brazil during the late 1970s. A newly completed highway had encouraged an influx of cattlemen and land speculators intent on dispossessing local smallholders of their farmland. The region's mounting violence led the World Bank to initiate a smallholder scheme to legalize landholdings and raise farm incomes through a mixed farming project that emphasized cattle rearing and black pepper cultivation for market. But the project's efficacy was limited to about 100 families, a small proportion of the area's Afrodescendant farmers who had occupied and farmed the region for generations. This fieldwork sparked my interest in the smallholder rice-based mixed farming system and curiosity about how an Asian food crop had become such an important subsistence staple.

When Michael Watts joined the UC Berkeley Geography Department, I had completed my PhD coursework. Watts' research on the relationship of hunger and famine to colonial policy in Nigeria—work that would prove foundational in the emerging field of political ecology—inspired me to shift my dissertation research to West Africa. Despite adding years to my tenure as a graduate student, this volte-face gave me the opportunity to work in another world region where rice formed the cornerstone of a smallholder food system. Fortuitously, fieldwork on both sides of an

Atlantic settled by Africans and their descendants offered a comparative perspective that continues to yield many research insights.

Figure 2. Piaui: actually this is from Maranhão along Itapecurú River, rice field, 1998.

Source: Judith Carney personal archive

I began in the small West African country, The Gambia, by researching the socio-environmental impacts of a proposed anti-salinity dam along the Gambia River on lowland rice growers. This led me to realize that rice was a woman's crop. By this I mean women exclusively plant, tend, harvest, and mill a crop whose disposition and economic benefits they retain. This wetland rice system was planted in some two-dozen distinct lowland micro-environments; it differed considerably from that planted in mangrove estuaries along the West African coast, which involved the participation of both men and women, although their work tasks were gender-differentiated.

I went to Senegambia in the 1980s, a decade after the devastating Sahelian drought had caused widespread crop failure and famine. Seeking to make agricultural production more resilient, international development agencies sought to "drought-proof" the region by emphasizing wetland (over rainfed) agriculture and introducing pump-irrigated rice. This would allow year-round cultivation, instead of crop production during a single rainy season. But by the mid-1980s, these projects had consistently failed. Interviews with female rice growers and site visits to the pump-irrigation project areas revealed the reasons why: the projects were developed on women's traditional rice lands. But instead of registering the plots in the names of their rightful female owners, donor agencies recorded the titles as household property and listed them under the name of the male household head. In effect, women lost control over their traditional floodplain fields though rice cultivation continued to be female work. Irrigated rice demanded women to produce two harvests of the crop annually instead of one—a considerable intensification and prolongation of their traditional farm labor—while the plot registration process meant senior household males now controlled the disposition of the paddy females produced and its economic rewards.

Gendered struggles over who would labor in year-round rice cultivation and to whom the benefits of that work would accrue repeatedly undermined Gambian irrigated rice projects, illustrating the key issue that subverted donor efforts to commercialize a woman's crop. The shift to year-round rice cultivation and marketable surpluses could only be realized by drawing male family labor into project fields during the dry season, when harvest of men's rainfed crops was completed. Their assistance would ease women's work burden during the second cropping season, which registering the patriarchal household head as plot owner aimed to encourage. Expected male assistance did not, in fact, materialize, and the men felt no obligation to surrender their newly conferred entitlements. Unsurprisingly, this engendered conflicts with the women who had been dispossessed. Donor agencies hoped to appease the women-and-development community with initiatives labeled as "women's projects" while failing to anticipate the intra-household disputes that erupted when men claimed benefits they had not earned. I concluded my dissertation

fieldwork by studying other micro-environments where women planted rice, with an aim to understanding the agroecological principles and knowledge systems that informed their traditional systems.

Figure 3. P1050164: mangrove forest research along the Gambia River estuary, 2015.

Source: Judith Carney personal archive

The Gambian rice mechanization projects promoted high-yielding Green Revolution Asian rice varieties, but I had learned of a traditional seed that women planted in inland swamps, known appropriately in the vernacular as "no man's business." This, as it turns out was a type of African rice. Only when I returned to Berkeley to write my dissertation did I learn from library research that some of the traditional rice varieties women planted in The Gambia were not Asian but representative of an entirely separate species (*Oryza glaberrima*) that had been independently domesticated in West Africa thousands of years ago. This would make me think again about the Afrodescendant smallholder rice growers I had encountered years earlier in Maranhão.

On a Rockefeller Foundation postdoctoral fellowship in Mexico, I came across a hamlet on the Gulf Coast south of Veracruz named *Mandinga*, the very name of the ethnic rice growers from whom I had learned so much on the other side of the Atlantic. Mandinga was an Afrodescendant community settled in a wetland landscape where rice was planted until the 1970s when commercial production in Mexico had discouraged local cultivation. This encounter with rice in still another Afrodescendant community of the tropics motivate me to look at the crop's Atlantic history. It also rekindled my interest in Alfred Crosby's 1974 classic book, *The Columbian Exchange*, which profiled the intercontinental crop transfers that occurred as a consequence of European maritime expansion. Crosby's emphasis on New World and Asian plant exchanges only considered Africa as a "one-way recipient" of botanical transfers: a continent whose ability to feed its people would vitally depend on the arrival of domesticated species from other world regions. There was no mention of the crops Africans had domesticated or their dissemination to other tropical regions of the globe. Moreover, the only rice discussed was Asian rice. Struck by a gaping lacuna in scholarship that I otherwise admired (and was much influenced by), I embarked on a mission to add African crops and the peoples who domesticated them to Columbian Exchange scholarship.

YOUR WORK ON AFRICAN RICE IN THE AMERICAS HAS CONTRIBUTED TO A MORE COMPREHENSIVE VIEW OF THE COLUMBIAN EXCHANGE BY GOING BEYOND EUROPE. COULD YOU EXPAND ON YOUR CONTRIBUTIONS TO THE STUDY OF THE PEOPLE OF THE AFRICAN DIASPORA?

Crosby's *The Columbian Exchange* drew attention to the significance of plant and animal transfers in the early modern world for environmental and food history. But emphasis was on European maritime expansion and the role of ship captains, naturalists, and missionaries for disseminating new species across oceans. In his next landmark book on environmental history, *Ecological Imperialism*, Crosby identified another set of historical actors as protagonists in intercontinental species transfers. These were European migrants, who established white settler colonies with the

familiar crops and livestock that accompanied them to new lands. By transforming the environments of New England, Australia, New Zealand and South Africa, they refashioned them into *Neo-Europes.*

Crosby's groundbreaking approach spurred me to engage more deeply the mechanisms by which African crop domesticates became established in the plantation period. As a tropical continent, African plants remained relatively unknown in temperate zone metropoles until postcolonial migrations in the second half of the twentieth century created the demand for their appearance in supermarkets and on restaurant menus in the global North. African (and most tropical) domesticates require different knowledge and skill sets to flourish in the context of a climate that enables year-round cultivation but heightens pest predation. While European plantation owners turned their attention to sugarcane, cotton, indigo and other monocultures, the food systems sustaining daily existence in the New World tropics involved combining multiple crops in a single plot to enhance soil fertility while minimizing loss from pathogens. Such systems had been mastered by Old and New World tropical farmers. Following the collapse of Neotropical indigenous populations, Africans became the custodians of two tropical farming systems. Remarkably, it was on the humble subsistence plots of slaves and on the food fields planted by maroons where Diasporic Africans creolized the dietary achievements of tropical food systems of the Atlantic world.

Building upon Crosby's insights regarding the peoples who served as intermediaries in plant diffusion, my first book *Black Rice* introduces to Columbian Exchange scholarship another set of protagonists in intercontinental plant exchanges, centered within the transatlantic slave trade and the forced migration of enslaved Africans to the Americas. A thorough reading of secondary sources and slaveholder accounts identifies the presence of key African crop domesticates in the early plantation period. In this instance of plant diffusion, emphasis is not on the merchant ships that expanded European imperialism across the globe but specifically on the more than 35,000 ships that carried some 12 million Africans to bondage in the Americas.

Logbooks of slave-ship captains illuminate the significance of food grown in Africa for provisioning these floating prisons on the months-long journey across the Atlantic. The African foodstaples were unintended crop introductions, inadvertently arriving in New World ports as provisions occasionally leftover from a slave voyage.

African agency in their introduction can be inferred in several ways. A striking feature of the plantation period is the number of anecdotes by plantation owners that credit the enslaved with the introduction of specific foods that we now recognize as native to Africa. In attributing agency to enslaved Africans, these accounts offer a contrasting view to longstanding historical narratives that claim slaves contributed little but their labor to the agricultural and environmental history of the Americas. Moreover, the African vernacular names for many of these tropical foodstaples were adopted into the colonial languages, indicating that European planters had no word in their own idioms for these novel foods. Some examples include *benne* (sesame), *quiabo*/okra, *inhame/ñame/*yam, cola, gumbo, *cuxá* (sorrel), banana, and *caruru/callalou*.

Planters and naturalists made their first acquaintance with many of these crops in the food fields of their slaves. It is often forgotten that the enslaved grew not only the commodity crop for export but in many plantation areas, also the very foods that fed themselves and planters alike. Slave food fields are likely the sites where Carolina planters first grasped the suitability of rice as a plantation crop for the colony's extensive wetlands.

Figure 4. P1040782: mangrove rice system, The Gambia, 2015.

Source: Judith Carney personal archive

Yet another way in which we can perceive African agency in crop introductions is through oral histories. In the mid-twentieth century anthropologists and botanists, puzzled over why maroon communities in the Guianas grew rice, posed the question to them. The maroons recounted an oral history of an enslaved female ancestor–a rice grower from Africa–who tucked rice grains into her hair as she was led off the slave ship. The precious seeds escaped detection and this, the maroons say, is how we came to grow rice. The narrative thus underscores the significance of slave

ships and enslaved women for seed transfers from Africa. Significantly, this oral history substitutes the agents of global seed transfers celebrated in the Columbian Exchange literature—European navigators, colonists, naturalists, and men of science—with the agency of an enslaved African woman whose deliberate effort to disembark the slave ship with seed rice helped her people re-establish an African dietary preference in New World plantation societies. Rice grains were carried in the same manner by enslaved females who escaped to maroon communities. In visits to these settlements (*quilombos*) in the Brazilian states of Maranhão, Pará and Amapá, I came across a similar rendition of this narrative.

We know that women were separated from men on slave ships and held near the quarter deck and the ship's food stores. Archival records as well as a few paintings from the era indicate they were at times put to work preparing meals for the captives. Slave ship captains preferred buying milled African food grains (rice, millet, sorghum) for provisions but noted that these were not always available in local markets. When purchased with the indigestible hulls still attached, the grains required subsequent hand-milling by mortar and pestle, skilled work that women performed during the voyage. The distinction between milled and unmilled grain is vitally important, as any grain purchased in the husk (not yet milled or cleaned) required removing the hulls to ready it for human consumption. Significantly—and this is critical for understanding the African components of the Columbian Exchange—any unmilled grain—and *only* a grain not yet milled—is also a seed. In other words, any unmilled grain leftover from a slave voyage indeed could potentially serve as seed for growing it elsewhere.

The maroon oral history illuminates subaltern agency in plant introductions by underscoring the significance of slave ships and enslaved women for seed transfers from Africa. Significantly, it substitutes the agents of global seed transfers celebrated in the Columbian Exchange literature—European navigators, colonists, naturalists, and missionaries—with the agency of an enslaved African woman whose deliberate effort to disembark the slave ship with seed rice enabled captives to re-establish an African dietary preference in New World plantation societies. As cooks and preparers of food, enslaved women created dishes with the signature African ingredients that stealthily

made their way to planters' tables and came to define the celebrated foodways of former plantation societies.

As brought together from multiple fields of investigation, such diverse evidentiary approaches indicate that even as involuntary migrants to the Americas, enslaved Africans also were protagonists in the introduction and establishment of Old World tropical food crops in plantation societies.

Figure 5. P1000835: research Central African Republic, 2018.

Source: Judith Carney personal archive

FOOD AND THE ENVIRONMENT ARE DEEPLY INTERTWINED, AS YOU HAVE SHOWN IN YOUR WORK ABOUT RICE AND, MORE RECENTLY, ON MANGROVES. HOW HAS ECOSYSTEM HEALTH AND DIVERSITY INFLUENCED BOTH THE FOOD SECURITY AND WELL-BEING OF COMMUNITIES YOU HAVE WORKED WITH?

An example drawn from a book I am writing about mangrove ecosystems can elucidate. Mangroves are rapidly disappearing across the world due to coastal urbanization, road construction, port development, and shrimp farming. They protect low-lying coasts from erosion and storm surges, a problem that will only worsen with climate change and rising sea levels. The ecosystem is also a crucial nursery for many commercial fish and other endangered marine species, another reason why it has become a global conservation priority. Mangrove estuaries are now increasingly targeted for protection as part of marine reserves. However, conservation initiatives often fail to consider that mangroves have long been inhabited by people. Shell middens on both sides of the Atlantic attest to a robust shellfishery that supported human occupancy for thousands of years.

Europeans first encountered mangroves along the West African coast in the fifteenth century. Mariners soon learned to fear them as a pestilential habitat associated with lethal fevers that left many dead. Scientific understanding of the disease etiology of malaria and its treatment lagged well into the nineteenth century. This did little to allay an enduring Western perception of mangroves as an environment seemingly incompatible with human well-being. But West African mangroves were indeed inhabited. Coastal peoples used the fishery and shellfishery for daily protein; the forests supplied rot-resistant wood and medicinals; the organic soils could be planted to rice and oil palms. A habitat that Europeans feared as “the white man’s grave” was for its inhabitants a vital food forest that sustained life.

During the period of slavery, the mangrove littoral of Colombia, Ecuador, Brazil, and the Guianas sheltered fugitive slave communities. Mangroves offered escaped slaves a formidable refuge: a vast, entangled aquatic landscape, insulated by European anxieties. Unknown at the time, but certainly part of the runaways’ advantage was the genetic sickle-cell trait that conferred resistance against the

deadly falciparum form of malaria. These self-liberated people formed communities, protected by the mangrove redoubt and using its food forests to sustain a way of life that continues to this day. I should note that a remarkable feature of African and Diasporic mangrove communities is that the shellfishery—the collection of oysters, clams, and other mollusks—is typically the province of women.

Contemporary mangrove conservation initiatives continue to be informed by longstanding European perceptions. Conservationists are often predisposed to view human beings as intruders while privileging protection of non-human species. Conservation set-asides based on such premises facilitate the expulsion of an ecosystem's human denizens, even if they have lived there for generations. This "fortress conservation" approach in mangroves ignores an alternative environmental history where traditional user groups have in fact acted as environmental stewards. Mangrove communities could continue to make positive contributions to environmental sustainability if conservation projects treated them as partners instead of trespassers.

BASED ON YOUR DEEP AND WIDE-RANGING EXPERIENCE, IN WHAT DIRECTIONS MIGHT YOU POINT GRADUATE STUDENTS SEARCHING FOR PROMISING RESEARCH TOPICS OR QUESTIONS?

We have barely scratched the surface of African contributions to the environmental and food history of the Americas. Until the second decade of the nineteenth century, there were more Africans settled in the western hemisphere than Europeans. Yet, their role in the making of the Americas remains for the most part conceptualized as providers of mere labor and little else. Scholarship remains fixated on the plantation and mining economies that developed in the New World and the slave-produced commodities that made slaveholders wealthy. However, when we shift the focus of historical inquiry from plantation export crops to the food systems that provided the enslaved daily sustenance, another perspective emerges.

Most plantation societies developed in the New World tropics. It is seldom appreciated that the enslaved originated in a continent that is also for the most part

tropical. Africa's peoples were long practiced in raising livestock and growing food in the great diversity of tropical environments found in sub-Saharan regions. Among the Old World "migrants" arriving in the New World, only those forcibly migrated from Africa had experience as tropical farmers. Prior to the onset of the transatlantic slave trade, European planters forced Amerindians to produce their own food while they labored on export monocultures such as sugarcane, indigo, and cotton. The decline of native populations led to the importation of enslaved Africans as a replacement labor force. Thus, a new cohort of expert tropical farmers were introduced to plantation societies. A view of Neotropical environmental history from this perspective has been little explored.

The interaction of Amerindians and Africans in tropical America unfolded in several ways: working alongside each other in plantation fields, but also through slave escapes to Amerindian communities in hinterlands beyond the colonizers' reach. Such circumstances allowed the knowledge and skill sets of each tropical food system to creolize. Well after the population collapse of many native groups, enslaved Africans and their descendants drew upon this environmental and botanical heritage, curating on their humble food plots a hybrid food system that abetted survival. The subaltern history of Amerindian and African interactions and their influence on environments and food systems of the New World tropics demand further study.

Finally, scholarship needs to accord greater attention to the role of slave food fields as incubators of crop experimentation. These sites of intense food production likely served as progenitors of the diverse smallholder farm systems that spread across tropical lands after the abolition of slavery, such as the ones I encountered decades ago in Maranhão, Brazil.

Figure 6. MV Crispim: research in a quilombo in Monte Verde, Minas Gerais, Brazil with the quilomobla Crispim in 2005.

Source: Judith Carney personal archive

AS AN AWARD-WINNING AUTHOR, YOUR WORK IS HIGHLY ORIGINALLY AND WELL-RESPECTED. IT IS ALSO POLITICALLY ENGAGED. COULD YOU TALK ABOUT HOW YOUR COMMITMENTS TO ISSUES OF GENDER, RACE, AND THE ENVIRONMENT HAVE SHAPED YOUR RESEARCH? IN WHAT WAYS DO YOU THINK HISTORICALLY-MINDED SCHOLARS CAN ADDRESS CONTEMPORARY PROBLEMS THROUGH THEIR WORK?

I actually did not begin my career specifically interested in issues of gender, race, and environment. Instead, I think they naturally emerge from the research I have conducted. My guiding passion was to understand why so many people went hungry

in a world that produced ample food. Growing up in Detroit, Michigan I knew families that were food-insecure. I always imagined that the rural equivalent were people referred to as peasants. For the most part, the smallholder farmers I encountered in tropical regions at the beginning of my studies did not fit the definition of food-deficit households. In terms of material possessions owned, yes, they could be considered poor. But they were not hungry. In fact, I was often struck by the fact that many of these smallholder families generated farm surpluses that were sold in regional markets. Most of these farms did so without the application of industrial fertilizers, relying upon cropping assemblages, organic inputs, and other sustainable techniques to maintain soil fertility.

Over time I began to think of this repository of agronomic knowledge as the principal reason generations of Afrodescendant smallholders were able to remain on the land for many decades after abolition. This in turn led to thinking about how their ancestors' food insecurity during slavery might have shaped this knowledge. Encountering a wetland farming system in West Africa that was gendered offered new insights when I subsequently learned about the role of rice during the transatlantic slave trade and its linkage to specific environmental histories in the New World.

Today, we are in the midst of a new plantation era, where technology replaces human workers and agribusiness monocultures sweep away many of the landscape's remaining small farmers. As entire tropical biomes are burned and bulldozed for commodity production or pastureland, the alarm over biodiversity loss renews calls for species and habitat protection. Yet these efforts seldom consider how the inherent agrobiodiversity of many smallholder farming systems actually strengthens conservation goals. The place-based knowledge that informs many of these smallholder food systems creates diverse landscapes that offer safe harbor and migratory corridors for species.

Such farm systems have a proven record of being resilient and sustainable; as loci of agrobiodiversity, they provide a critical counterweight to the unsustainable chemical-dependent monocultures of our time. The food movements currently energizing metropoles the world over exalt organic options that are sustainably

grown, precisely what many of the globe's smallholders have long provided. Historically-minded scholars can make an important contribution to these contemporary environment and food issues by studying the circumstances that shaped specific small-farm sectors and their role in maintaining agrobiodiversity in the world today. In New World tropical regions, this would require greater attention to ecosystems that enabled distinct smallholder groups to survive and to the agroecological acumen that allowed them to do so. This would also entail a willingness to combine archival research with fieldwork to document the lived environmental histories of their occupancy. Examples of such smallholder systems in Brazil include rubber tapper reserves, some *quilombos*, *ribeirinho* farms, and Bahia's ancestral Afrodescendant palm oil landscape.

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